EXPLORING EDUCATIONAL PRACTICES IN 8th GRADE MATHEMATICS CLASSROOMS: POSITIVE STUDENT-TEACHER RELATIONSHIPS USING CULTURALLY RESPONSIVE PEDAGOGY

DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL

IN FULFILLMENT FOR THE DEGREE

DOCTORATE OF EDUCATION: EDUCATIONAL ADMINISTRATION & SUPERVISION

BY

JONIQUE BURTON

SERENA SALLOUM, PH.D. - CHAIR

BALL STATE UNIVERSITY

MUNICE, INDIANA

MAY 2021

APPROVED BY:

Dr. Serena Salloum, Committee Chairperson	Date
Dr. Kendra Lowery, Committee Member	Date
Dr. Gene Berger, Committee Member	Date
Dr. Nick Elam, Committee Member	Date
Dr. Adam Beach, Dean of Graduate School	Date

ABSTRACT

In public education, the opportunity gap, or the arbitrary circumstances in which students are born, limiting access to resources both inside and outside of school, in 8th grade mathematics by race, ethnicity, income and English learner status continues to persist. School leaders have implemented programs, adopted new curriculums, instituted various practices and strategies in the classrooms to mitigate the opportunity gap. It is believed when marginalized students are given the proper resources and opportunities, all students are capable of succeeding. One potential strategy to narrow the opportunity gap is culturally responsive teaching. The purpose of this qualitative research study was to explore teaching practices, specifically to the extent in which practices are culturally responsive. Furthermore, in this study I examined how these practices related to cultivating student-teacher relationships. Research questions were answered by conducting and analyzing observations and interviews in the fall semester with three 8th grade mathematics teachers in an urban, diverse populated Southern California middle school. During the observations, Culturally Responsive Instruction Observation Protocol (CRIOP) was used. It is devised of eight pillars but only seven of the pillars were used for this study due to limitations. Within the seven pillars, there are 31 culturally responsive indicators that were used as evidence based on the observations. Throughout the qualitative data analysis process, there were four overarching themes that emerged from the observations and interviews. The four themes are (a) personalized language, (b) humanistic approach, (c) communication and (d) collaboration. The data collected consistently connected with all four themes. The pillars that are associated with these themes are (a) classroom caring and teacher disposition, (b) discourse/ instructional conversation, and (c) pedagogy/ instructional practices.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

DEDICATION

This work is dedicated to my husband, James Burton, Sr. for his undeniable love and support throughout this journey. You never let me give up and I am forever grateful. Without you, none of this would be possible. Thank you, my love!

To my children, Jillian, James Jr., and Justine, I hope my efforts to gain as much knowledge in my field is a role model for your future success in life. My desire is for all three of you to see me as "if she can do it, I can do it too".

To my mother, Connie Manuel, my first teacher, there are not enough words to express how much of a role model you have been in my life. Watching you as a teacher in the public education system for the past 30 plus years have given me the motivation to be the best I can be. I am because of you and I thank you!

To my departed father, John Brooks, Jr., even though you are not with us on Earth, your presence is here. When I told you, I wanted to get my doctorate, you said "Get the highest degree you can. You can do it." Daddy, I did it!

To my BONUS dad, Jackson Manuel, you have cheered for me at athletic events, dance recitals, graduations, the birth of my children, purchasing real estate, moving from state to state, marriage and now to my final degree. You have always supported me and given me awesome advice in the field of education. Thank you for supporting me as your "extra credit" and loving me unconditionally.

To my two English teachers from McMain Secondary Magnet School, Lois Phipps and Margaret Correro, you inspired me in an area that I was not comfortable with English language arts and literature - 9th grade English (Lois Phipps) and 10th/11th grade English (Margaret Correro). After 25 years, I can still remember sitting in your classes. Before the term "culturally responsive pedagogy" was a phenomenon in education, your pedagogical practices demonstrated all of the attributes of a culturally responsive educator. Thank you for being a teacher who touched my life and encouraged me to enjoy the simplicity of the etymology of words, how to annotate great novels, and how to bring a novel to life. Thank you!

ACKNOWLEDGMENTS

To Dr. Serena Salloum, thank you for giving so much of your time and energy to make sure that I accomplished this goal from the Midwest to the Far west.

To my committee members, thank you for your support and guidance.

To Bryant & Shondria Seaton, thank you for pushing me to continue to write when I wanted to stop and believing in me that I can accomplish my Doctorate of Education.

To Dr. Briant Williams, thank you for believing in me more than I believed in myself.

To Soror Dr. Lynette Hookfin, thank you for the support and encouragement.

Thank you, Dr. Gloria Ladson Billings, Dr. Zaretta Hammond, Dr. Geneva Gay, Dr. Pedro Noguera and Dr. Tyrone Howard for pushing this "work" into the minds and hearts of all who listens and receives.

CHAPTER 1 – INTRODUCTION

As researchers monitor student test scores and the achievement gaps between African American and White students and Latinx and White students, there is a change in the population of students in public schools. The once White-majority student population is now becoming the minority-majority that includes various racial and ethnic backgrounds. Unfortunately, K-12 American teacher demographics do not reflect the same change as in the student population. The current homogenous teacher population is predominantly White, middle-class women (Loewus, 2017). Research states that students of color do better on a variety of academic outcomes when taught by teachers of color who act as role models and who understand matters of diversity (Boser, 2011). However, this is not a definitive factor for students succeeding in school. Teachers from different orientations, from various backgrounds, and with a wide range of beliefs and positioning can be equally successful at teaching students as can a teacher who looks like the students (Milner, 2012). Since the statement made by Secretary of State Richard Riley in 1998 that "our teachers should look like America," relatively little progress has been made toward ensuring the teaching workforce demonstrates diversity in ethnicity, class, or gender (Albert Shanker Institute, 2015). Therefore, schools and teachers need to be more aware and take proactive measures to provide opportunities where they are engaged with students and developing positive relationships with intentions of narrowing the achievement gap.

In the 21st century, being an effective teacher is more than standing in a classroom and delivering a lesson. Teachers are challenged with facilitating a curriculum that will involve higher-order thinking skills and conceptual learning. An effective teacher must be able to facilitate a lesson with the intended outcome of all children being able to critically think, problem solve, and use information processing skills (Hammond, 2015). Students who have

challenges with the aforementioned tasks are considered dependent learners. Hammond (2015) states that dependent learners are relying on the teacher to carry most of the cognitive load of tasks are lessened, unsure of how to tackle a new task, cannot complete a task without scaffolds, will sit passively until a teacher intervenes, and does not retain information well. Many of these students who are dependent learners are culturally and linguistically diverse students. Often African American and Latinx students have been classified as dependent learners. These learners struggle academically because sufficient opportunities in the classroom to develop cognitive skills and habits of mind that would prepare them to take on more advanced academic tasks are lessened (Boykin & Noguera, 2011; Jackson, 2011). Due to many African American and Latinx students' language, race and socioeconomic status, their cognitive skills as well as their motivation to want to achieve have been hindered.

In this chapter, I discuss California's academic achievement gap and plans of action to mitigate this achievement gap, including an exploration of the nationwide shift in demographics of students in K-12 schools and the relatively unchanging demographics of public school teachers. I also examine areas that may need to be more thoroughly researched regarding their potential to reduce the achievement gap by teachers utilizing culturally responsive practices in the classroom while addressing the external factors. The historical aspect of addressing the achievement gap is discussed to give a perspective of how the nation is making progress toward reducing the academic achievement gap.

Background of Study

California K-12 public schools are continuing to face similar academic achievement gaps as many other states. In 2018, California K-12 schools consisted of 6,220,413 students. The percentage of Latinx students was 54.3% (3,376,591) and African American students comprised

5.5% (340,841) of the student population (California State Dashboard, 2018). Within the 6 million plus students, 61.5% are socioeconomically disadvantaged. With the given demographics, White students comprised 23.2% (1,442,388) of the population. On the Smarter Balanced English language arts test, White students scored 27.7 points above standard on the 2018 Smarter Balanced test, while African American students scored 51.8 points below standard and Latinx students scored 31.3 points below standard. On the Smarter Balanced Mathematics test, White students scored 1 point below standard. While African American students scored 91.5 points below standard and Latinx students scored 65.8 points below standard. Results from the 2018 Smarter Balanced test show that the achievement gap continues, and it would take a generation or more to close this gap (Walters, 2018). Comparing California students taught in the same schools, with the same curriculum and by the same teachers, students of color are not earning the same academic scores on summative standardized tests as White students.

In 2007, researchers and educators developed Getting Down to Facts which brought together stakeholders and researchers to provide research-based information to support improvements in California's schools. In 2018, researchers in California came together for the second time to consolidate evidence on how to improve education in California. The summary report is called Getting Down to the Facts II (GDTF II). The GDTF II effort has again convened and coordinated a broad set of researchers, educators, policymakers, and other stakeholders to address key policy questions related to the state's continuous improvement efforts (Loeb, Edley, Imazeki, & Stipek, 2018). Two of the key findings from the summary report suggested:

- Large achievement gaps continue to persist in California by race, ethnicity, income, and English learner (EL) status; and

- All of California's children are behind before they enter Kindergarten. The system needs a continued focus on closing the achievement gaps through multiple approaches including enhanced early childhood education.

Based on these findings, California adopted new standards and aligned assessments for the improvement of student learning. Moreover, teachers, including those in schools with students who would require more need such as students who are not achieving on an average level, reported in surveys that they perceived improvements in the alignment between instructional materials and California's grade-level standards as well as better alignment of district professional development with teachers' needs.

Although GDTF II researchers have documented the steady progress California students have made on test performance, they also have found that California continues to lag behind the nation, with both lower average scores and greater disparities among student groups relative to other states (Reardon & Hinze-Pifer, 2018). In more affluent California districts, student achievement levels are like the average performance in affluent communities nationally, but California students in non-affluent districts score, on average, nearly a full grade level behind their national counterparts. Differences between African American and White students, and Latinx and White students, are also greater in California than in most other states (Loeb et al., 2018). The size of the gap shrinks noticeably when a student's socioeconomic status is considered, and California's White-Latinx gap becomes smaller than that of other states. But the African American-White gap persists and exceeds the gap relative to other states (Loeb et al., 2018). One of the subject areas where the gap is consistent across the state of California and the nation is mathematics.

Mathematics is a subject that allows students to think critically and problem solve while using their analytical skills to reason through inquiry. Flewelling and Higginson (2005) stated that inquiry, investigations, and problem solving "give" students the opportunity to use their imagination and to get into the habit of doing so. In contrast, traditional text-based tasks provide the student with little or no such opportunity" (p. 19). Students who only learn how to do mathematics procedurally and not conceptually may not get the opportunity to acquire and master a logical thought process. Learning experiences in mathematics foster the development of evaluation, reasoning, and logical stepwise thinking skills which serve as invaluable tools for life beyond the classroom (Espedido & Toit, 2017).

Before going in detail about the mathematics achievement gap in California, it is important to situate the disparity on a national level. In general, the low achievement levels of students in the United States show the need for systemic changes in public schools (Darling-Hammond, 2010; National Assessment of Education Progress, 2015). Nationwide, in mathematics, only 40% of public school fourth graders and 33% of all eighth graders scored at or above proficiency in 2015 (National Assessment of Education Progress, 2015). Similarly, in mathematics, only 42% of public school fourth graders and 34% of eighth graders meet or exceed proficiency in 2013 (National Assessment of Education Progress, 2013). From 2013 to 2015, the scores of students who met or exceeded proficiency substantially remained close. As an exploration of racial/ ethnic subgroups, 19% of African American students and 26% of Latinx students (National Assessment of Education Progress, 2013) in the 4th grade scored at or above proficiency in 2013. As for the 8th grade scores in 2015, 13% of African American and 19% of Latinx students scored at or above proficiency. The student's White peers' percentage at or above proficiency was 43% (National Assessment of Education Progress, 2013). The percentage

between African American and Latinx students compared to their White peers was a significant difference.

In 2017, the state of California academic gaps between different racial groups remain wide, with only 10% of African American students and 15% of Latinx students meeting Smarter Balanced benchmarks in eighth-grade math, compared to 44% of White students and 29% of students overall (Resmovits, 2018, April 9). Ryan Smith, executive director of the Education Trust - West, commented on Smarter Balanced results in the LA Times, "We have to start putting our actions where our words are. I am concerned that California claims to be a beacon on the hill and yet still leaves Black and Latinx students languishing on the sidelines" (Resmovits, 2018, April 9). Many students, particularly students of color, are underserved by the current educational system. African Americans and Latinx are underrepresented amongst the highest achieving students (Plucker, Burroughs, & Song, 2010). Researchers have studied that factors outside of school can influence the achievement gap.

Socioeconomic Status (SES)

One of these factors is the socioeconomic status (SES) of students. Socioeconomic status is considering the person's occupation, educational level, and income (Eroglu, Bozgeyikli & Çalışır, 2009). The SES of students contributes to the achievement gap before students enter school and expands as children progress through school, most notably in mathematics skills (Galindo & Sonnenschein, 2015). Thus, the most widespread explanations for the achievement gap are family SES (Goudeau, Autin, & Croizet, 2017).

Cultural Background

Because many schools utilize a "one-size-fits-all" approach to education, the achievement gap persists (Dei, 2012). To that end, there are imperative needs in curriculum and

pedagogy, particularly regarding multiculturalism. When exploring student's SES, cultural background plays a major role in their education. Ladson-Billings (1994) suggests that teachers have the responsibility to make learning engaging and relevant for students. Culture plays an integral role in this process (King et al., 2014). Engaging students by merging their culture with the curriculum should allow for the subject of mathematics to become more relevant. Culturally responsive pedagogy (CRP) is a term that describes the importance of both relevancy and culture in student learning (Gay, 2018; Ladson-Billings, 1994). CRP is defined as using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them (Gay, 2018). Ladson-Billings' (2006a) article "It's Not the Culture of Poverty, It's the Poverty of Culture: The Problem with Teacher Education" supports Gay's (2010) research from years prior. It is imperative that educators must become more proficient with the definition of CRP and willing to incorporate culturally responsive strategies into their daily lessons. The strategies should also increase a positive student-teacher relationship.

Problem Statement

African American and Latinx students in 8th grade are not proficient in mathematics. As described in the 2018 summary report GDTF II, there is a vital need to examine the overall achievement of California 8th grade African American and Latinx students in urban middle schools, especially in the content area of mathematics. Research illustrates that culturally responsive teaching is a way to reach minority students and enhance outcomes (Gay, 2000). Culturally responsive pedagogy is a teaching approach that merges students' cultures with the curriculum. However, unclear is the extent to which culturally responsive practices are used in 8th grade mathematics classes.

Purpose of this Study

The purpose of this qualitative study is to explore teaching practices, specifically the extent to which practices are culturally responsive. Furthermore, in this study I examine how practices relate to cultivating student-teacher relationships. The data collected from observations and interviews illustrate the teachers' perceptions about the effectiveness of implementing culturally responsive practices. More research is needed to examine and describe how teachers' implement culturally responsive practices in 8th grade mathematics classes in urban school settings. This study adds value to existing educational research and informs parents, districts, campus leaders, and policy makers on how culturally responsive practices improve positive student-teacher relationships with African American and Latinx students in 8th grade mathematics classrooms.

Research Questions

This qualitative study is guided by the following research questions:

RQ1: To what extent do teachers use culturally responsive practices as measured by the Culturally Responsive Instruction Observation Protocol (CRIOP) when working with racially diverse students in 8th grade mathematics classrooms?

RQ2: How do these teachers describe building relationships in the classroom with their students?

Theoretical Framework

Critical Race Theory (CRT) frames this study. CRT arose as a legal discourse from the actions of the civil rights movement and the feminist social movements. To account for the role of race and the persistence of racism in education, CRT evolved into a mechanism to address understanding of educational inequity (Ladson-Billings, 1998). Love (2018) stated that educational researchers utilized CRT in the late 1990s to investigate how African American

students at predominantly White institutions were affected by racism and other institutionalized obstacles. Ladson-Billings (2005) stated that CRT gradually became a part of educational research through the analysis of educational practices and because of the legal scholarship movement in 1994. The evolution of CRT has established several tenets over time, which include (a) the permanence of racism, (b) whiteness as property, (c) interest convergence, (d) counter - storytelling, (e) race as a social construct, and (f) the critique of liberalism (Chapman et al., 2007; DeCuir & Dixson, 2004; Delgado & Stefancic, 2012; Sleeter, 2017; Taylor, 1998; Wallace & Brand, 2012). In Chapter 2 more details will be discussed pertaining to literature that addresses the problem statement while giving background information of the achievement disparities amongst White and African American and White and Latinx students.

Definition of Terms

Achievement Gap – The achievement gap refers to the situation where one group of students outperforms the other group(s) in academic areas (National Center for Education Statistics, 2015).

Culturally Relevant Pedagogy – A teaching mechanism "that empowers students intellectually, socially, emotionally, and politically using cultural referents to impact knowledge, skills, and attitudes" (pp.16-17). The use of students' cultures and strengths to bridge school and student achievement; to validate students' life experiences by utilizing their cultures and histories as teaching resources and to recognize students' home cultures; to connect home, life, and school (Ladson-Billings, 1994).

CRIOP – Culturally Responsive Instructional Observation Protocol – The CRIOP is an instructional framework and measurement tool designed to assess and support instruction in

seven components of culturally responsive instruction (Powell, Cantrell, Malo-Juvera, & Correll, 2016).

Culturally Responsive Pedagogy – Using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them (Gay, 2018).

Latinx - A gender-neutral term sometimes used in lieu of Latino or Latina (Chang et al., 2017).

Opportunity Gap – The term opportunity gap refers to how arbitrary circumstances into which people are born, such as their race, ethnicity, zip code, and socioeconomic status, impact their opportunities in life; the opportunity gap contradicts the belief that all people have the same chance to achieve to the best of their potential (Mooney, 2018).

In this chapter, I discussed the academic gap that exists in the state of California for students in 8th grade mathematics. In chapter 2, I discussed relevant literature pertaining to academic gaps of racially diverse students and how teachers' pedagogy is addressed.

CHAPTER 2 – LITERATURE REVIEW

Background

This chapter includes my investigation of literature that examines past national policy on the academic achievement gap and the existing academic achievement gaps amongst White and African American students and White and Latinx students. The chapter begins by providing an overview of the federal acts and the demographic changes of students and teachers in U.S. schools. Chapter 2 discusses how the term achievement gap has shifted to "opportunity gap." The potential causes of opportunity gaps for minorities and how they generate inequity, are examined. CRT is reviewed in relation to culturally responsive pedagogy. Two research-based pedagogies that have been developed to help teachers' bridge student learning with student culture through differentiated instructional practices are explored. Before an explanation of both pedagogies which link culture and pedagogy, a description and research that supports each term are given. The terms are examined on the implementation of culturally relevant pedagogy and culturally responsive pedagogy to build stronger student-teacher relationships with the outcome of improved student achievement. Finally, this chapter contains information on strategies embedded within pedagogies that help increase student engagement and provide culturally diverse students with a more equitable educational experience.

The academic achievement gap has been in the forefront of not only states but the federal government as well. Since the Coleman Report of 1966, educational research has been explored with the intentions of mitigating the academic achievement gap. Nearly two decades ago, President George W. Bush enacted No Child Left Behind Act (NCLB). In 2001, the first federal legislation to address the achievement gap was introduced. The goal of this act was to equalize outcomes for all public-school children. The act required each state to implement an integrated

system for reporting data on student achievement. The act also was specifically designed to disaggregate data to illustrate the achievement gap (Ladson-Billings, 2006). In fact, one goal of NCLB was to bring all subgroups to parity with the dominant White students by 2014. This was an ambitious plan, because discrepancies between racial groups had been observed in school children as young as 2 years of age and continued to increase and widen as the student ages (Zorn et al., 2010).

In 2009, President Barack Obama implemented Race to the Top. This was a component of his economic stimulus package, which required "a national data system to record student test scores and to track student progress through the educational system" (Spring, 2011, p. 455). Using Race to the Top funds, the federal government offered financial incentives for states that addressed reform in four specific areas: 1. Adopting new teaching methods to prepare secondary students for both college and the workplace with an emphasis on preparing them to compete in the global economy. 2. With respect to handling of data, efforts were needed to improve existing—and create new—data systems (similar to NCLB) for a more comprehensive manner of measuring student growth and success, as well as informing teachers and administrators about what works (or does not) in school instruction.

With the need to improve the achievement gap, many researchers studied practices and strategies to alleviate the achievement gap. Due to a conglomerate of research, two terms were formed that merged culture and pedagogy. Both terms, culturally relevant pedagogy, and culturally responsive pedagogy, include pedagogical practices designed to improve student outcomes while building strong student-teacher relationships. The listed terms have been used interchangeably, hence, both terms can be defined by many scholars as an approach that gives hope and guidance to educators who are trying to improve academic achievement of students

from diverse racial, ethnic, cultural, linguistic, and social-class groups (Gay, 2018). School curriculum must become more multicultural and factual in order to meet the needs of the nation's 21st century diverse learners. Teachers will need additional training to meet the needs of the ethnically and linguistically diverse student population.

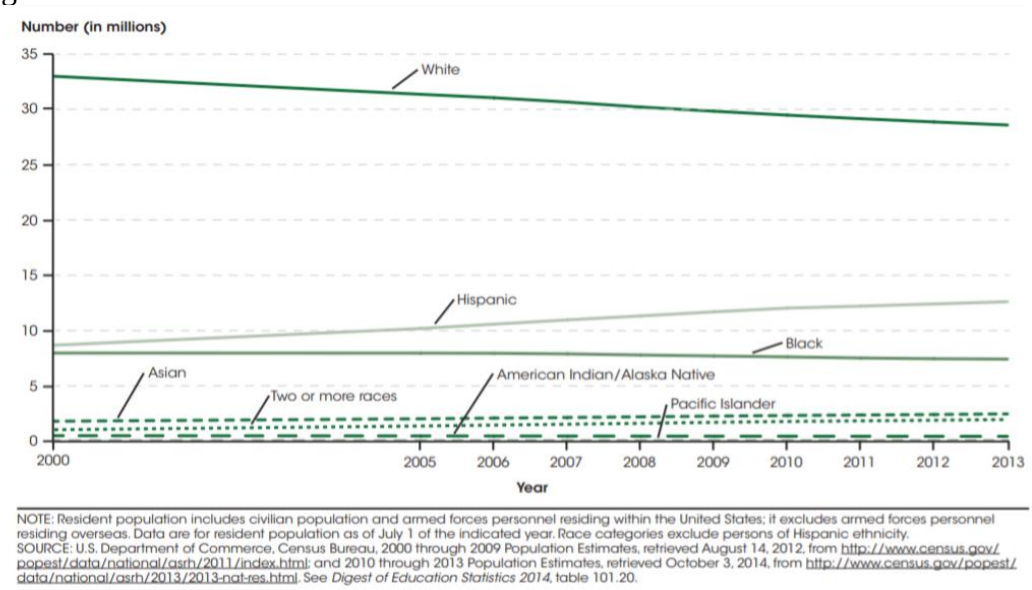
Preparedness of Teachers

College programs are not preparing teachers in the same manner. Many alternative education programs do not provide the same rigor, an extensive teaching field component, or ways for teachers to become fully exposed to various student cultures. The need for educators who are equipped to support diverse students and students in poverty, coupled with the unequal distribution of novice teachers at these schools, necessitates a transformation in educator preparation programs toward a focus on the distinct needs of students in high poverty/culturally and linguistically diverse schools (Maryland Teacher Consortium, 2014). Race and institutional racism are key factors that influence the interactions of students and teachers from different ethnic, cultural, language, and social class groups (Howard, 2016). Howard (2016) argued that there is a need to drastically change how teachers are educated and prepared to meet the needs of racially diverse students. Sleeter (2017) stated there is a need to produce more teachers who participate in teacher education programs that collaborate with minority communities to recruit and select teacher candidates. Participation in such programs will allow teachers to become better equipped in reversing discrimination and help develop knowledge regarding anti-discriminatory acts in educating students.

Demographic Changes of Students in U.S. Schools

The diversity of students in public schools across the country has evolved swiftly. According to Mordechay and Orfield (2017), for at least two entire centuries after the first official census in 1790, 80% to 90% of the population in America consisted of White people. In 2016, the National Center for Education Statistics (NCES) reported that there had been a significant decrease of enrollment of White school-age students of ages 5-17 from 2000 to 2013 (see Figure 1). Although there had been a decrease in the number of White students, there was an increase of students of the same ages of other racial groups. The National Center for Education Statistics (2014) estimated students from ethnic minority groups made up 50% of the students from pre-kindergarten through 12th grade in public schools.

Figure 1



NOTE: Resident population includes civilian population and armed forces personnel residing within the United States; it excludes armed forces personnel residing overseas. Data are for resident population as of July 1 of the indicated year. Race categories exclude persons of Hispanic ethnicity.
SOURCE: U.S. Department of Commerce, Census Bureau, 2000 through 2009 Population Estimates, retrieved August 14, 2012, from http://www.census.gov/popest/data/national/asrh/2011/index.html; and 2010 through 2013 Population Estimates, retrieved October 3, 2014, from http://www.census.gov/popest/data/national/asrh/2013/2013-nat-res.html. See *Digest of Education Statistics 2014*, table 101.20.

School Enrollment of School Age Children from 2000-2013 (National Center for Education Statistics, 2016)

Homogeneous Population of Teachers in U.S. Schools

Fay (2018) argued that although the population of school age children is becoming more diverse, the teaching force remains homogeneous in terms of race and gender. White students account for only 48% (24.1 million) of the public-school enrollment of 50.7 million. The remaining 52% (26.6 million) students consist of approximately 15.4% African Americans, 28% Latinx, 5.13% Asians, and 3.1 % of two or more races. The current teacher workforce does not reflect the nation's student population of majority-minority; the American Association of Colleges for Teacher Education (2013) reported that four out of five teachers or 80% are White. The percentage of teachers was less racially diverse than students according to the NCES (2016) report.

There is a higher turnover rate of minority teachers who leave the field of education than White teachers 19% and 15% minority teachers (Carver-Thomas, 2018). Carver-Thomas and Darling-Hammond (2017) emphasized that the large number of teachers who leave the profession have a significant impact on students of color in high needs schools. According to

Carver-Thomas (2018), more minority teachers are being recruited, but the enormous turnover rates are mainly due to lack of teacher preparation and mentoring programs. The report also highlighted how minority teacher candidates encounter difficulties accessing opportunities to enroll in high quality teacher education programs. Barriers such as the cost of teacher preparation programs, lack of continuous support, and teacher licensure examinations prevent minority teacher candidates from pursuing education careers. Gasman, Samayoa, and Ginsberg (2017) stated that African American and Latinx candidates are not successful on most teaching exams and the cost of retaking teaching licensure exams discourages them from the teacher candidate to educator pathway.

The homogenous demographics of teachers and student demographics demonstrate the need to aggressively attract and retain more minority teachers via policies and practices. Villegas and Irvine (2010) reported that minority teachers feel compelled to teach in low-income neighborhoods in which positions are hard to fill, yet it is a continuous struggle to retain them. They also advocated that minority teachers are more than likely to serve as "cultural brokers" or advocates that develop trusting relationships with students. The supply and demand of teachers, according to current student and teacher demographic shifts, spotlights the need for teachers in specific content areas as well as diverse racial and ethnic backgrounds. Cowan, Goldhaber, Hayes, and Theobald (2015) stated that school vacancies in science, technology, engineering, and mathematics (STEM) demonstrate the greatest areas of need, with added difficulty staffing special education and bilingual minority teachers. Nguyen and Redding (2018) emphasized the importance for (STEM) teachers to be recruited and provide high quality STEM education, especially in schools that serve minority students. Their study described and analyzed the qualifications, demographics, and teacher turnover rates in the U.S. from 1988 to 2012. The

study findings reported how STEM teacher turnover rates are like teachers who are not in STEM subject areas in public education. In the field of special education, Cooc and Yang (2016) examined racial backgrounds and the distribution of special education teachers along with their teaching credentials. The analyzed data revealed that the majority of teachers who had special education credentials and licenses were White, but there had been a slight increase of minority teachers from 1997 - 2014. Their study also investigated school and student disparities, such as campus racial demographics and student achievement in comparison to special education teacher qualifications. The findings highlighted the need for additional policies to improve special education teachers' diversity.

Although it is important for minority students to have minority teacher role models, some researchers argue that being a minority teacher does not mean that he or she can effectively implement culturally relevant practices in the classroom. Hammond (2015) stated that there is a myth that only minority teachers can incorporate culturally relevant pedagogy strategies and build positive relationships with minority students. Hammond (2015) asserted that being culturally competent is not about a person's race or background but requires having a "cultural eye" for cultural differences of students within a classroom setting and appropriately responding to their needs. However, some studies have indicated that teachers of color can boost the academic performance of students of color. Longitudinal data from North Carolina suggest African American boys from low-income families who had at least one African American teacher in grades 3 to 5 were 39% less likely to drop out of high school than those who had never had an African American teacher. For African American students, identified as "persistently low-income," who received free or reduced-price lunch every year of grades 3 through 8, having a African American teacher increased their intentions of going to college by 19% and by 29% for

African American boys (Carver-Thomas, 2018). Not only can students of color benefit from having a teacher of color, but White students benefit as well due to teachers of color bringing a distinctive knowledge, experiences, and role modeling to the students (Carver-Thomas, 2018). To effectively educate minority students, we should not only rely on recruiting minority teachers, but it is important to ensure that all teachers are equipped to support minority students (El-Mekki (2018). Lynch (2012) agreed that cultural biases are obstacles to culturally responsive pedagogy, including the biases of minority teachers. Lynch (2012) argued that a teacher who has had a different upbringing from any student could possibly struggle with responding to that child's cultural needs. It is a person's experiences and how they were raised that cause an initial bias. Despite the biases that teachers may have, this can affect the student-teacher relationship but not stop it. Villegas and Lucas (2002) encouraged teacher educators to critically examine their programs and systematically interweave throughout prospective teachers' coursework, learning experiences, and fieldwork the strategies that research has shown better prepares them to work successfully with diverse students.

Developing Culturally Responsive Relationships

Building positive student-teacher relationships is the key to guide teachers to effectively incorporate culturally responsive practices in a classroom setting. Culturally responsive relationships are not just something nice to have; they are critical (Hammond, 2015). Hammond also suggested that a "collective-based community culture" is needed to serve as the foundation for a healthy student-teacher relationship. This collective-based community culture is an atmosphere of caring, respect and trust. Another important aspect of building positive student relationships is the emphasis on relationships in the classroom are important during the learning process for the teacher and student (Porges, 2011). Students perform better in environments

where they feel comfortable and valued. Interpersonal relations have a tremendous impact on the quality of teaching and learning (Gay, 2018). Hammond (2015) suggested that teachers building a rapport is connected to the idea of affirmation, which acknowledges the personhood of students. Garza's (2009) interviews with White and Latino students confirm the importance of teachers building caring relationships, then scaffolding new learning in a way that builds on what is familiar to students (Garza, 2009).

A culturally responsive teacher takes the opportunity to build a collective-based community with their students. Students feel validated and capable of learning presented information when their learning environments and the methods used to present information are culturally responsive to them (e.g., Gay, 2002; Risko & Walker–Dalhouse, 2007; Nieto, 2004). This safe space connects teachers and students to work in a space that allows a sense of caring and sense of community. With developing this type of relationship, the academic outcome is expected to be quality. Paulo Freire's (1970) work was about honoring students' cultural backgrounds and ways of knowing, thereby transforming classrooms into spaces of liberation. A collective community is a space where students are not experiencing any barriers to learn. As well as having the collective based community, setting the culture of caring is also a tenet of culturally responsive pedagogy when developing positive student-teacher relationships. Gutiérrez (2002) argues that rather than basing pedagogy and curriculum on global and stereotypic racial and language identities that others project onto the students, excellent teachers take the time to get to know their students, then shape their pedagogy around relationships with them. Within the collective based community of being a culturally responsive teacher, a sense of care for the students is established. Gay (2000) explicitly elaborates on the importance of care to culturally responsive teaching when she states:

> Caring is one of the major pillars of culturally responsive pedagogy for ethnically diverse students. It is manifested in the form of teacher attitudes, expectations, and behaviors about students' human value, intellectual capability, and performance responsibilities [...] This is expressed for their psycho-emotional well-being and academic success; personal morality and social actions, obligations and celebrations; community and individuality; and unique cultural connections and universal human bonds. (Gay, 2000, pp. 45–46).

Howard (2010) operationalizes care in a way that is consistent with Gay's (2000) conceptualization of the concept, when she states that "caring is one of the major pillar[s] of culturally responsive pedagogy for ethnically diverse students. It is manifested in the form of teacher attitudes, expectations, and behaviors about students' human value, intellectual capability, and performance responsibilities" (p. 45). Hence, how teachers demonstrate their caring is intricately tied to culture (Eslinger, 2013). Eslinger (2013) contended that without considering and cultivating culturally responsive caring relationships between teachers and students, the academic success for many students from racialized minority groups will remain, in the words of Langston Hughes (1990), as a "dream deferred" (p. 221).

Achievement Gaps to Opportunity Gaps

The academic achievement gap across the United States has historically persisted between disadvantaged minority students and their advantaged counterparts. The National Center for Education Statistics (2015) stated that there is an achievement gap when one group of students outperforms the other group(s). There is a significant difference in academic scores amongst the two groups. The distinction between the groups and their academic abilities leads to academic achievement gaps. On average, African American students generally score lower than White students (NCES, 2015). For example, on the National Assessment of Educational Progress

NAEP 2011 Mathematics Grade 8 Assessment, African American students scored 31 points lower, on average, than White students (National Center for Education Statistics, 2011). The current report corroborates these achievement disparities of public-school student performance on the nationwide NAEP 2011 Mathematics Grade 8 Assessments (NAEP, 2018).

The academic achievement gap of student racial groups coincides with the socioeconomic status of students in American public-school settings. According to the National Governors' Association, the achievement gap is "a matter of race and class. Across the U.S., a gap in academic achievement persists between minority and disadvantaged students and their white counterparts." It further states, "This is one of the most pressing educational-policy challenges that states currently face" (National Governors' Association, 2005).

There is also a vast academic achievement gap, as well as difference in population growth, between Latinx and White students. According to the National Council of La Raza (NCLR) (2016) report, there was a 50% increase in the Latinx student population between 2000 and 2005, compared to the 14% to 4% decrease in population of both White and African American students. The NCES (2017) and Status and Trends in Education of Racial and Ethnic Groups (2017) reported a 21-point difference in the mathematics achievement performance of Latinx students in comparison to their White counterparts in 8th grade. The authors reported a significant difference in assessment results as well as socioeconomic status. The NCES (2017) Status and Trends in the Education of Racial Ethnic Groups (2017) revealed that 37% of African American students under the age of 18 live in poverty in the U.S. The highest poverty level is followed by 31% of Latinx children and 12% of both White and Asian children. Ansell (2011) defined "achievement gap" as the discrepancy in academic performance between groups of students in success measures such as grades, standardized-test scores, and drop-out rates. The

term identifies disproportion amongst groups, but it does not guide educators on how to resolve student inequity issues in American public schools.

However, the new term "opportunity gap" clearly helps teachers align their practice with current educational reform. The term opportunity gap refers to the arbitrary circumstances in which people are born such as their race, ethnicity, zip code, and socioeconomic status will strongly influence their opportunities in life, rather than all people having the chance to achieve to the best of their potential (Mooney, 2018). Deshano, Huguley, Kakli, and Rao (2007) emphasized how many students and social groups lack opportunities in education. Inequitable educational opportunities are based upon issues in society and the failure of educators to address social ills. Mooney (2018) stressed the importance to frame the overall problem of student inequity and hold everyone accountable instead of placing the responsibility on children for unequal systemic injustices. Furthermore, utilizing the term "opportunity gap" in lieu of achievement gap promotes the belief that when given the proper resources and opportunities, all students can achieve their academic potential.

Bailey and Dynarski (2011) stated that opportunity gaps across socio-demographic groups have always existed and have had a negative impact in education, healthcare, and the overall national employment statistics. The ESSA, the updated Elementary and Secondary School Act, helps policymakers with new options to remove opportunity gaps in many states (United States Department of Education, 2015). Some children and their families have fewer opportunities when it comes to high-quality education, including access to experienced and effective teachers and adequate school resources (Solano & Weyer, 2017). These gaps in opportunity can be considered a significant contributor to the achievement gap. Strauss (2018)

highlighted how The Schools of Opportunity Project demonstrated that students learn more when they have rich opportunities, and they fall behind when denied opportunities.

Equity in Education

Achievement and opportunity gaps identified within sociodemographic and ethnic groups illustrates the need for equity in American public education. According to the Organization for Economic Co-operation and Development (OECD, 2012), the highest performing education systems across the world combine quality with equity. OECD (2012) defined equity in education as not having obstacles in a student's individual or social circumstances: gender, race, ethnicity, and family status. There should be no barriers to a student's academic opportunities and every child should receive the minimum of skills regardless of his or her gaps in opportunities in U.S. educational settings. Masters (2018) stated that an educational system can include equity if it ensures that all students, especially minorities who are at risk, are considered equal and given equal opportunities. Specific resources, such as teacher expertise, should be prioritized to students with greater need. Masters (2018) gave two examples of how education is viewed as equitable: (1) addressing unequal learning needs, which includes the expectation that all students will reach the same point in their learning at the same time, and (2) addressing unequal student backgrounds by prioritizing fairness over equality.

Critical Race Theory

Since equity has been an evolving topic in the field of education, many scholars continue to analyze the deeper understanding of the educational barriers for people of color. The framework of Critical Race Theory (CRT) has given people a sense of hope and support since the civil rights era of understanding the complexity the African American and Latinx students' face academically achieving (Taylor & Ladson-Billings, 2009). Critical Race Theory (CRT)

arose from legal discourse regarding the American civil rights and radical feminist movements, which sought to account for the role of race and the persistence of racism, but eventually CRT evolved into a useful way of understanding educational-inequity (Ladson-Billings, 1998). Some of the early work of CRT began in the mid-1970 by Derrick Bell and Alan Freeman (Delgado & Stefancic, 2000). In education, Gloria Ladson-Billings and William Tate (1995) introduced CRT in their seminal article "Towards a Critical Race Theory in Education." Given skepticism towards race neutrality, objectivity, color blindness, and meritocracy, CRT recognizes that racism has been widespread in the United States (Delgado & Stefancic, 2012). As part of the broader goal of CRT, this theory worked toward eliminating all forms of racial oppression (Matsuda, 1993). Love (2018) stated that educational researchers utilized CRT in the late 1990s to investigate how African American students were affected by racism and other institutionalized obstacles at predominately white institutions. Ladson-Billings (2005) stated that CRT gradually became a part of educational research through the analysis of educational practices and as a result of the legal scholarship movement in 1994. The evolution of CRT has established tenets over time, which include (a) the permanence of racism, (b) whiteness as property, (c) interest convergence, (d) counter-storytelling, (e) race as a social construct, and (f) the critique of liberalism (Chapman et al., 2007; DeCuir & Dixson, 2004; Delgado & Stefancic, 2012; Sleeter, 2017; Taylor, 1998; Wallace & Brand, 2012). Cabrera (2018) offered up hegemonic Whiteness, as an additional tenet of CRT and stated it can be utilized to challenge and change racial oppression in higher educational settings. Ladson-Billings (1998) discussed the possibility of CRT as a powerful explanatory tool for the sustained inequity that people of color experience in public education. The areas of curriculum, instruction, assessment, school funding and desegregation were used as examples of the relationship that can exist among CRT and

education. Gilborn (2006) argued that CRT is rapidly changing in education and forms of anti-racism have not been able to keep pace with increases in exclusionary education policies.

One CRT tenet emphasized in educational studies, permanence of racism, has always existed whether discrimination against minorities is considered as conscious or unconscious. According to Milner (2008), racism will remain permanent in American society and persist especially in the educational domain. Donner, Anderson, and Dixson (2018) highlighted the permanence of racism in the election and re-election of President Barak Obama. President Obama was embraced by many U.S. citizens and his election outcomes served as hope and life chances of people of color. However, the election of America's first minority President also caused an uproar and backlash. Even though President Obama was elected to the highest political office, his citizenship status was questioned. Some believed that he was not born as a citizen of the United States due to his cultural background. Obama was born in Hawaii and he produced not only a birth certificate that was placed on the internet, but he also produced a newspaper birth announcement (Shear, 2011). It became clear that this part of Obama's background had played a prominent role in this ongoing debate (Maraniss, 2012).

Kohli, Pizarro, and Nevarez (2017) reviewed articles in education research that examined racial inequity in K-12 schools and analyzed 186 K-12 studies. The analysis consisted of categorizing research findings based upon "new racism" and grouping data into two specific categories (1) research that focused on racism's permanence in the lives of minority students and (2) literature that confronted racism through racial literacy. The findings revealed the need for additional K-12 research that directly acknowledges the educational experiences of minority students and perceived racism. The research also implied that there is less at tension given to the various mechanisms used to structure racial oppression.

The second tenet of CRT, whiteness as property, can be considered to have various meanings such as intellectual property, and physical property. This tenet can help to examine the resources that teachers have access to use in their culturally responsive classrooms. The quality and quantity of curriculum availability varies from school to school. Ladson- Billings (1995) provided an example of intellectual property by comparing two teenagers in preparation for high school. One of the teenagers who attended an upper-middle class predominantly White school, had the option of taking foreign language classes such as Spanish, French, German, Latin, Greek, Italian, Chinese, and Japanese. The other teenager, who attended school in an urban, largely African American school district, could only choose a Spanish or French course. Not only was the foreign language selection quite different in the course catalogs, but there was also a difference in the variety of mathematics and elective courses offered as well. This is an example of insufficient "equity and access" for all students. According to Ladson-Billings (1995), this is an example of "rich" intellectual property that limits the opportunity for minority students to learn at the same rate as other students.

Interest convergence is the third tenet that stresses that racial equality and equity for people of color will be pursued and advanced when they converge with the interests, needs, expectations, and ideologies of Whites (Milner & Milner, 2008). Inherent in the interest-convergence principle are matters of loss and gain; typically, someone or some group, often the dominant group, has to negotiate and give up something in order for interests to converge or align (Bell, 1980; Donnor, 2005).

Another CRT tenet, counter-storytelling, has been explored by educational researchers to recognize racism and promote equity in education. The counter-storytelling tool can be viewed as a framework that validates racial experiences of people who have been marginalized (Ladson-

Billings, 2005; DeCuir & Dixson, 2004). CRT scholars utilize the counter-storytelling method to contradict racism in society. According to Delgado and Stefancic (1993), counter-storytelling contradicts the "majoritarian" stories that give privilege to Whites, men, and other normative views of society. The counter-storytelling is allowing undeserved people to tell their side of the story and counteract the initial stories given by the historical majority. Solórzano and Yosso (2002) used a "counter story" tool to examine the experiences of minorities and contradicts the majority "White story" in academics. Their study analyzed CRT methods to incorporate stories that challenged and addressed racism and sexism. Hubain, Allen, Harris and Linder (2016) incorporated the counter storytelling method in a study by examining the negative experiences of 29 minority students in U.S. master's education programs. The researchers found that minority students encountered facets of racism in college classes throughout their graduate academic programs. These findings revealed the need for graduate preparation programs and the commitment of American university officials to promote diversity and equity.

The critique of liberalism tenet addresses racial issues within the legal system, pretentious color blindness in society, and inequities in education based upon mediocre standards for minority students. The U.S. legal system has always disadvantaged people of color and it continues to do so. The law needs to be understood of the history and context of our legal system to be fully aware of how minorities and women are most often marginalized (Taylor et al., 2009, p. 293). Not only is racism an issue in jails or prisons but racism is an internal issue happening in many settings all over the world. The antics of racism can be subtle or blatant. Seemingly, race always matters (Ladson-Billings, 1995). Such as racism issues within the prison systems, the education system also endures racism. Ladson-Billings and Tate (1995) stated that race is an important factor that reveals inequities in education which can lead to the provision of more

multicultural educational practices. In schools, with multicultural educational practices being increased, racism still plays a part in marginalizing students of color. Many believe they are color but being colorblind upholds racism. When a students' race and identity is not acknowledged, this is a form of being color blind which is racism. Krings (2017) highlighted how color blindness in American education encourages the lack of acknowledging student race and identity, which leads to unconscious inequity practices. Being blind means not able to see something. When teachers state to their students that they are color blind, they are undermining students' race and identity. Ladson-Billings (2009) stated it is possible that teachers may be color blind and not recognize student race in the classroom, which invalidates the importance of incorporating culturally relevant practices. With the demographic changes of students and teachers, it is impossible to not recognize students of color in the classroom. In a study in relation to being colorblind, Mekawi (2017) revealed how many Americans accredit being colorblind as a type of racial ideology to support equal distributions of resources. Mekawi's study (2017) examined colorblindness of White undergraduate students and found that most were unaware of racial privilege and lacked empathetic concern regarding racism and institutional discrimination of others.

CRT is the framework for my study. Solorzano and Yoss (2002) proposed that CRT "is a framework that seeks to identify, analyze, and transform those structural and cultural aspects of education that maintain dominant and subordinate racial positions in and out of the classroom" (p. 25). CRT scholars initially critiqued ongoing societal racism in African American and White binary terms and focused on the slow pace and unrealized promise of civil rights legislation. Researchers eventually advanced the framework to examine the multiple ways that African Americans, Native Americans, Asian Americans, Pacific Islanders, Chicanas/os, and Latinx

experience, respond to, and resist racism and other forms of oppression (Caldwell, 1995; Wing, 1997, 2000). Since Critical Race Theory seeks to address aspects of racism, it can also be applied to address the achievement gap and missed educational opportunities of minority students in comparison to their White student counterparts in urban public-school settings.

Pedagogies that Influence Student Achievement

The attempt to close opportunity gaps for students of various ethnic backgrounds in public schools has led to an educational trend of incorporating culturally relevant pedagogy. Howard (2012) stated that the achievement of minority students can improve if culture and pedagogy are merged within classroom lessons. According to Hammond (2018), the purpose of culturally relevant pedagogy should be to help underserved children to become empowered critical thinkers. A culturally relevant pedagogy makes the traditional educational instruction more meaningful and valuable to children of color (Ali & Murphy, 2013).

Culturally relevant pedagogy was brought to the forefront of American educators who serve majority minority students, which led to culturally responsive teaching, the ability to teach course content to students in relation to their cultural context. Hammond (2018) argued that educators sometimes confuse cultural responsiveness with simple multiculturalism to "honor diversity" as opposed to associating the term with building student thinking skills. She stressed the importance of understanding the process of the culturally responsive pedagogy in order to create more equitable outcomes, which can continuously help to close opportunity gaps. Opportunity gaps for minority students can be addressed with the merging of culture and pedagogy. Both terms have similar meanings, yet both have the same expected outcome of closing the achievement gap through the merging of culture and pedagogy (See Table 1).

Table 1

Comparison of Culturally Relevant Pedagogy & Culturally Responsive Pedagogy

	CULTURALLY RELEVANT	CULTURALLY RESPONSIVE
Key Authors	Gloria Ladson Billings (1994)	Geneva Gay (2000)
Definition	Use students cultures and strengths to bridge school and student achievement, to **validate** students life experiences by utilizing their cultures and histories as teaching resources and to recognize students home cultures, connect home life and school; Rest on the criteria: critical or social consciousness, academic success and cultural competence	A multidimensional, student-centered approach that promotes equitable excellence and serves to **validate** and **affirm** the experiences and contribution of students from all cultures and background; connected to multicultural education
Teacher Skill	Characterized by teachers adapting to their student's needs, knowing their students, attending to the voices of their students, encouraging higher level thinking, teachers applying curriculum to real life circumstances and intertwining family with curriculum	Characterized by teachers who are committed to cultural competence and student who can maintain their cultural identities and integrity while flourishing in the educational context

Note. Text from Samuels, Samuels, & Cook, 2017.

Culturally Relevant Pedagogy

Culturally relevant pedagogy is a student-centered approach to teaching and learning along with a teacher's reflection of his or her practices. Ladson-Billings (1994) defined a culturally relevant pedagogy as one "that empowers students intellectually, socially, emotionally, and politically using cultural referents to impact knowledge, skills, and attitudes" (pp.16-17). Culture is an essential part of learning in a classroom (Gay, 2010). According to Milner (2011), when culturally relevant pedagogy is implemented in a classroom, teachers can work towards building a rapport with students, which eventually deepens the teacher to student relationship. Many teachers understand the need for developing a positive relationship with their students in order to increase student achievement. Milner (2011) stated that teachers who successfully

incorporate culture in a classroom view culture as an asset and not a barrier. Milner's article (2011) described how a White teacher developed cultural competence by developing an understanding of self and teaching reflections. The teaching experiences of a White teacher in an urban setting illustrated how a teacher can build cultural congruence with students of all ethnic backgrounds, which can lead to an increase in student achievement. Milner (2011) highlighted that it is imperative for teachers, researchers, and other educational stakeholders to understand how teachers must build positive relationships with students. A teacher must address his or her cultural background within an urban context and develop reflexivity regarding culturally relevant practices to build relationships with students.

According to Boutte and Hill (2006), a student's culture can help bridge his or her academic performance. Being exposed to as many educational and positive aspects of life can be beneficial for a child. Exposure is the best teacher. With the exposure, it is also validating when the student's teacher is affirming and accepting their life experiences and incorporating these life experiences into the curriculum. Boyle-Baise (2005), stated that in order for a student's life experiences to be validated, his or her culture and histories should be acknowledged and utilized as a resource in the classroom. Neuman (1999) highlighted that recognizing a student's culture helps promote collaboration among student peers, helps raise standards, and connects a student's home life with academic experiences.

Culturally Relevant Pedagogy Studies

Many studies have been conducted on culturally relevant pedagogy to delineate its framework and guidelines. Participants from Young's study (2010) defined culturally relevant pedagogy as teachers adapting to the needs of their students, knowing their students, attending to the voices and stories of their students, and applying curriculum to real life circumstances.

Samuels (2018) examined the perspectives of in-service teachers related to culturally relevant pedagogy. This study was conducted to determine possible strategies for utilizing a culturally relevant pedagogy framework in a K-12 setting and how to foster a more equitable learning environment. The results of this study challenged teachers to evaluate their own personal biases in order to successfully cultivate culturally relevant practices in the classroom. Kieran and Anderson (2018) studied how a culturally relevant pedagogy encourages educators to design instruction from the perspective of seeing aspects of student diversity as strengths rather than deficits. Their study highlighted how culturally relevant pedagogies are compared with facets of an instructional framework to support teachers when planning effective and high-quality lessons and activities.

Numerous studies have been conducted on the effectiveness of culturally relevant pedagogy. Byrd (2016) studied the effectiveness of culturally relevant pedagogy via case studies of exemplary classrooms. The study included 315 sixth through twelfth grade students across the U.S. which included 62% female, 25% White, 25% Latinx, 25% African American, and 25% Asian students. The students completed surveys regarding their experiences of culturally relevant pedagogy and various opportunities to learn about other cultures and racism. According to Byrd, a culturally relevant pedagogy was significantly associated with positive student academic outcomes and ethnic-racial identity development.

Barriers to Implementing Culturally Relevant Pedagogy

Although culturally relevant pedagogy is a powerful way to increase student achievement, engagement, and decrease achievement gaps, incorporating culturally relevant strategies into the classroom can be a challenge. Young (2010) found that teachers' cultural bias can serve as barriers to implementing culturally relevant practices with fidelity. Some of these

biases may include lack of race consciousness, insufficient knowledge and understanding of his or her own race, and greater need to be accepting and affirming of other races. Goetchius (2018) stated that confronting culturally insensitive comments and bias is not easy, but it brings students and teachers closer to the ideal resolution that educators want to see in situations with students. To successfully teach all students, not just those who most closely reflect U.S. society's White mainstream, teachers must have the knowledge, disposition, and skills to effectively implement and assess a culturally relevant pedagogy (Gay, 2000).

Culturally Responsive Pedagogy and Teaching Practices

While the theoretical framework of culturally relevant pedagogy was cultivated, another pedagogy was on the horizon. This approach to teaching incorporated attributes, characteristics, or knowledge from a student's cultural background into the classroom with intentions to improve the educational outcomes and to close the achievement gap (Mayfield & Garrison-Wade, 2015). This approach is called culturally responsive pedagogy, which was coined by Geneva Gay. Culturally responsive pedagogy requires teachers to understand and accept students' cultural and home linguistic ability while supporting students' experiences outside of the school (Gay, 2010; Mayfield & Garrison-Wade, 2015). Culturally responsive pedagogy is a student-centered approach to teaching that bridges student culture within a learning environment (Gay, 2010; Howard, 2012; Lynch, 2012). As with culturally relevant pedagogy, both terms merge culture and pedagogy together with the goals of developing positive student-teacher relationships and increasing student achievement. Based on Ladson-Billings, (1994) culturally relevant pedagogy uses students' culture and strengths to bridge school and student achievement and to validate students' life experiences. Culturally responsive pedagogy was explained by Gay (2000) as a multidimensional, student-centered approach that promotes equitable excellence and serves to

validate and affirm the experiences and contributions of students from all cultures and backgrounds. According to Howard (2012), culturally responsive pedagogy is an approach to teaching that incorporates attributes, characteristics, or knowledge from a student's cultural background into instructional strategies and course content in an effort to improve educational outcomes.

An example of culturally responsive practices is a teacher allowing students to address real life problems and issues within their community and with the teacher drawing upon the students' "funds of knowledge" or the historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being. It is also noted that funds of knowledge represent a realistic view of households as containing ample cultural and cognitive resources with great potential utility for classroom instruction (Moll, Amanti et al., 1992). In 1956, a teacher in northern Rabun County, Georgia wanted to make classroom engagement more meaningful for 9th and 10th grade Appalachian students (Gay, 2018). The teacher's goal was for the students to learn their typical curriculum but also to incorporate the cultural heritage of their everyday lives. The outcome of this instruction was an academic program of 16 courses; a series of Foxfire magazine; 21 published books; Teacher Networks for professional development; the creation of a Foxfire Museum and Heritage Center, to name a few (Gay, 2018). The Foxfire Project is a successful program that illustrates when students' cultural narratives are integrated with existing curriculum, student achievement can follow. The project teacher and director shared the responsibility with students by using their cultural funds of knowledge of the Appalachian communities surrounding the school (Gay, 2018).

Not only can culturally responsive pedagogy tap into the student's culture, but it also allows students to develop social capital with others (Gay, 2000; Howard, 2012). A student's social capital can be developed from the associations made throughout his or her lifetime. According to Bourdieu (1986, p. 248) social capital is defined as "the aggregate of the actual potential resources which are linked to possession of a durable network of institutionalized relationships of mutual acquaintance or recognition." In other words, relationships give people access to resources. Social capital was later referred to by Todman (2018) which includes access to networks which help students navigate in the world. Social capital can serve as the guiding factor for a student to gain employment, enter college, and receive additional opportunities outside of the school setting. According to Todman (2018), friends and family help students translate the world around us by teaching unwritten rules. This translation can have a significant impact on a student's life since many people have social capital passed on to them from parents, family circles, and immediate friends. Todman (2018) agreed that some students have access to more social capital than others. Students with more social capital have easier access to acquiring better jobs, internships, and other opportunities that can create a richer educational experience. These experiences can lead to better educational advancements. Gay (2010) described culturally responsive teaching practices as the teacher being able to accept the cultural heritage of all ethnic groups and building the bridge between home life and school experiences. Hajducky (2018) stated that culturally responsive teaching allows for urban children to increase their chances of having a growth mindset. If a student has a growth mindset, he or she can have the ability and intentions of becoming academically successful without fear. The lack of fear allows a student to continuously seek additional and ongoing opportunities to learn new information and build upon current knowledge. Hajducky (2018) stated that minority students often lack access to role

models that they can relate to and have far less opportunities to improve their academic trajectory. Hajducky emphasized that limited resources can be less of a barrier if culturally responsive teaching is encouraged in settings that support urban minority students. Having a growth mindset enables a student to bridge the exposure gap between minority students and their affluent peers. The access to their culture within the curriculum also helps bridge exposure gaps between affluent and underprivileged students.

Culturally responsive teaching practices include communicating high teaching expectations and learning expectations along with accepting all student cultural groups. The practices that these teachers facilitate allow students and teachers to accept the cultural heritage of all ethnic groups, to build bridges between home and school life experiences, to differentiate learning to meet the needs of all learners, to know and accept personal cultural backgrounds, and to incorporate all multicultural information being taught in school (Gay, 2000). Hammond (2018) emphasized that culturally responsive teaching helps students build their capacity to grow, while expanding their potential to flex their brain.

One example of culturally responsive pedagogy is called cultural modeling. Cultural modeling includes ways to challenge students to think about their own life experiences as they relate to the content being studied. According to Risko and Walker-Dallhouse (2007), the teacher would then share other interpretations of such stories through music, books, film, or recorded dialogue of someone with the same issue. Culturally responsive pedagogy does not mean that a teacher must become a master of all cultures of the classroom but should be comfortable with meaningful classroom dialogue that supports student learning. Culturally responsive pedagogy works from a place where teachers believe in and enact their ability to effect change in society through the realized potential of the future leaders they work alongside. It is the pedagogy that

emerges within a relational dialogic space (Berryman et al., 2013). Wink (2011) expressed the importance of knowing that dialogue is considered two-way, which allows for change within a person and the contexts in which we learn from others. Practicing culturally responsive pedagogy allows the teacher to learn and embrace the culture of his or her students. Students in a class where the teacher is respectful of the culture of every student are more likely to experience cognitive comfort as well as better educational outcomes (Howard, 2012). The cognitive comfort brings forth a positive student teacher relationship. Culturally responsive pedagogy can also allow teachers to view student cultures as a strength in the classroom as opposed to a deficit (Samuels, Samuels, & Cook, 2017). This pedagogical paradigm shift is needed to improve the performance of underachieving students from various ethnic groups by tapping into student's personal and cultural strengths, intellectual capabilities, and their prior accomplishments (Gay, 2018).

Rightmyer, Powell, Cantrell, Powers, Carter, Cox and Aiello (2008) developed a Culturally Responsive Instruction Observation Protocol (CRIOP) tool. This tool can be utilized to allow teachers to assess their level of usage of culturally responsive practices. Some examples of a culturally responsive and non-culturally responsive practices are listed in Table 2.

Table 2

Classroom Examples of Responsive vs Non-Responsive

EXAMPLES OF A RESPONSIVE CLASSROOM	EXAMPLES OF A NON-RESPONSIVE CLASSROOM
● Teacher differentiates instruction, recognizing students' varying background knowledge, readiness, language, preferences in learning, interests, etc.	● Teacher criticizes the students, not the work ● Teacher has low expectations ● Teacher does not call on all students
● Teachers learn about diverse perspectives along with students ● Teacher models active listening ● Teacher involves students in collaborative groups	● Most students work in the form of isolated seatwork ● Students are reprimanded for helping each other
● Teacher uses an investigative approach ● Teacher arranges shared literacy experiences that build a sense of community	● Teacher-dominated lectures ● Prefabricated worksheets or workbooks ● Exclusive use of textbooks
● Teacher uses critical thinking techniques ● Teachers helps students think in multiple ways and from multiple perspectives	● Teacher reduces complex content to lists facts ● Teacher never engages students in dialogue about the issues being raised in the text

Note. Text from Rightmyer, Powell, Cantrell, Powers, Carter, Cox & Aiello, 2008.

Summary

There is a strong need to increase academic achievement for all racial and ethnic student groups regardless of U.S. teacher demographics in public schools. There is no statistical alignment of ethnic and cultural backgrounds of teachers who serve minority students in both public elementary and secondary school settings, especially in urban and low socioeconomic areas. According to the National Center for Education Statistics (2013) report, by 2023, minority students will represent at least 55% or more of students in both U.S. elementary and secondary public schools. The number of non-white students will continue to grow over the next years as a

result of family expansions and immigration. The supply and demand of diverse teachers to support the change in U.S. student demographics is dismal.

There is a continuous need to attract and retain minority teachers that serve students of various ethnic backgrounds, but the sense of urgency and recruitment methods have not been enough to support the rapid and continuous increase in the majority minority student population and achievement gaps in U.S. public schools.

Learning Policy Institute (2018) press release stated by LPI President and Stanford professor emeritus, Linda Darling-Hammond (para 5).:

> Increasing teacher diversity is a very important strategy for improving learning for students of color and for closing achievement gaps. While White students also benefit by learning from teachers of color, the impact is especially significant for students of color, who have higher test scores, are more likely to graduate high school, and more likely to succeed in college when they have had teachers of color who serve as role models and support their attachment to school and learning. Students with racially diverse teachers also have fewer unexcused absences and are less likely to be chronically absent.

Minority teachers feel they acquire the natural ability to focus and recognize student needs and interests due to their own educational experiences within the same ethnic culture. Minority students thrive in an environment in which there is a highly effective classroom teacher/role model of the same ethnic background, yet current U.S. teacher demographics, and the fact that not all minority teachers can successfully relate to minority students indicate the need to implement culturally responsive practices. Current research and educational statistics have proven the need for teachers to incorporate culturally responsive pedagogical methods in American public education classrooms to decrease student achievement gaps and increase equity in education.

It is necessary to connect students' culture to their learning to enhance student engagement, the teacher and student relationship, and to increase student achievement. Culture is central to a student's learning. Not only does culture play a major role in the way students communicate and receive information in the classroom, but it also empowers students to become motivated to learn and make academic progress. Williams's research (2018) revealed how teachers who felt a sense of responsibility demonstrated care by listening to student academic and cultural experiences improved their own stereotypes of minority boys. The four teachers who participated in the study effectively implemented culturally responsive pedagogical methods in a middle school classroom to improve student equity and academic outcomes.

Educational literature exists that supports why culturally relevant/ responsive are necessary to support students of various ethnic backgrounds. However, additional literature is needed to assist urban educators in effectively implementing culturally responsive practices to support all students. Culturally responsive practices can increase the expected outcomes of student performance, decrease the achievement gap, and develop better student-teacher relationships. Research results by Zirkel (2008) validates the idea that quality education for ethnically and racially diverse students involves more than academics (Gay, 2018). With these purposes in mind, this study explores teaching practices of 8th grade mathematics classrooms at a diverse middle school that services minority students in an urban school district. Chapter 3 depicts a description of the methods that will be utilized in this study.

CHAPTER 3 - RESEARCH METHODS

The purpose of this qualitative research study was to explore teaching practices, specifically the extent to which practices are culturally responsive. Furthermore, this study examined how practices relate to cultivating student-teacher relationships and engagement. The data collected from observations and interviews illustrates the teachers' perceptions about the effectiveness of implementing culturally responsive practices. More research is needed to examine and describe how teachers implement culturally responsive practices in 8th grade mathematics classes in urban school settings. This study added value to existing educational research and informs parents, districts, campus leaders, and policy makers on how culturally responsive practices promote engagement and improve positive student-teacher relationships with African American and Latinx students in 8th grade mathematics classrooms.

Chapter 3 provides an overview of the methods utilized in this qualitative study. This chapter begins with a description of the research questions for this study. The participants and setting are described along with the overall research design which directed how the research was conducted and the data collected. The sampling methods, data collection process, and the data analysis techniques of this qualitative study are fully described.

Research Questions

This qualitative study was guided by the following research questions:

RQ1: To what extent do teachers use culturally responsive practices as measured by the Culturally Responsive Instruction Observation Protocol (CRIOP) when working with racially diverse students in 8th grade mathematics classrooms?

RQ2: How do teachers describe building relationships in the classroom with their students?

Research Design

From the perspective of a participant, the use of qualitative research tells a descriptive story. Denzin and Lincoln stated, "Qualitative research is a multi-method in focus, involving an interpretive, naturalistic approach to its subject matter" (1994, p. 2). Qualitative research is used when exploring a topic where in-depth interviews and observations are approaches used. According to Jameel, Shaheen, and Majid (2018), qualitative research examines the "why" and "how" of a phenomenon; it delves into the experiences, perspectives, and perceptions of individuals and groups instead of exploring the "what" and "how much." The "why" and "how" of a phenomenon gives more detail to the exploratory study. Kılıçoğlu (2018) described qualitative research as a description of events in its natural environment which can include participant interviews, observations, and the analysis of documents and tools. In addition, Corbin and Strauss (2008) claimed that qualitative research allows researchers to learn how meanings are shaped through and in culture along with revealing the inner experiences of its participants.

Research Methods Rationale

A case study approach was selected to gain a better understanding of how the teachers felt about the effects and implementation of culturally responsive strategies as well as to explore relationship building between the teachers and racially diverse 8th grade students at Crooked Valley Middle School (pseudonym), an urban school located in Los Angeles, California. Since this study investigated teacher pedagogical practices, a qualitative case study was determined to be the most appropriate method to conduct and collect data for this study. Collecting data for this study of pedagogy of mathematics teachers guided the research on the implementation of culturally responsive practices in the classroom with African American and Latinx 8th grade mathematics students.

As described in the first two chapters, it is necessary to find strategies to help students by guiding teachers to improve their pedagogical skills and providing them with additional ways to enhance the learning of all students, especially students who lack engagement in class and positive student-teacher relationships. To address the current gaps in academic achievement between African American and Latinx 8th grade students, the use of culturally responsive teaching practices was explored

Setting

This study took place at a comprehensive neighborhood middle school serving students in grades 6th through 8th grade, (CVMS), which was considered a traditional public school. The school site location for this study consisted of a population of 1664 middle school students during the 2018-2019 school year. Within this total population, the student demographics for the 2018-2019 school year included 38.2 % Latinx, 24.1% White, 13.7% African American, 10.58% Asian, 13% two or more races, 0.3% American Indian, and 0.12% Pacific Islander. The overall gender population of students during the 2018-2019 school year consisted of approximately 50% male and 50% female. Of the total student population, particular groups of historically marginalized students were identified, including 35.4% socioeconomically disadvantaged, 8.9% students with disabilities, 6.4% English learners, and 0.1% foster youth.

During the 2017-2018 school year, 568 eighth graders at CVMS took the California Assessment of Student Performance and Progress (CAASPP) mathematics assessment in March 2018. Out of the 568 students, 58 of the students were African American and 204 of the students were Latinx. Based on the CAASPP accountability system, there are four levels of achievement: Level 1 – “Standard Not Met,” Level 2 – “Standard Nearly Met,” Level 3 – “Standard Met,” and Level 4 – “Standard Exceeded.” The achievement scores for African American and Latinx

students in 2017-2018 showed that both subgroups earned lower scores than White students, which comprised one of the largest subgroups. In addition, 60% of White eighth-grade students scored in the range of "met/exceeded standards." Among Asian eighth-grade students, 75% scored in the "met/exceeded standards" category. Table 3 depicts the 2017-2018 CAASPP mathematics assessment scores of African American and Latinx 8th grade students. This table shows the breakdown of African American, Asian, White, and Latinx eighth-grade students' proficiency data on the annual CAASPP, which is used as a measurement tool for eighth-grade student achievement at CVMS.

Table 3

2017-2018 CAASPP Proficiency Data – Percent Proficient in Mathematics Grade 8 by Ethnicity

	% Exceeded Standards	% Met Standards	Nearly Met Standards	Not Met Standards
African American	20%	17.65%	29.41%	32.94%
Asian	51.56%	25%	7.81%	15.63%
White	38.99%	22.01%	18.87%	20.13%
Latinx	18.05%	22.44%	28.78%	30.73%

As is the case in many other states, California's dashboard compares local school data to the statewide data. The 2017-18 CAASPP data revealed that 51.65% of the overall eighth-grade student population at CVMS (the local school) "met or exceeded standards" in Mathematics compared to 36.88% of California's eighth-grade students statewide.

Out of a total of 459,147 California eighth-grade students able to test, the test scores of 458,673 students were valid. Out of these 458,673 test scores, 36.88% of students (n = 169,158)

in California “met or exceeded” Grade 8 mathematics standards measured by the CAASPP. Roughly 289,514 eighth graders in the state of California “did not meet” or “nearly met” the standards of proficiency in mathematics by 8th grade. In the 2017-2018 school year at CVMS, 589 students were enrolled in the eighth grade. Out of these, only 575 tests were valid for scoring. Based on the number of students who tested, almost half of the student population, 51.65% met or exceeded standards on the mathematics CAASPP. Compared to the state results, if the state is a baseline for what schools should use as an indicator of improvement, Grade 8 math proficiency scores at CVMS are above the state average.

Participants

Purposeful sampling was employed in this study; three mathematics teachers at Crooked Valley Middle School (CVMS), an urban school district in Los Angeles, California, agreed to participate in this study. CVMS was selected as the school to conduct the research given the known diversity amongst the ethnicity of students in southern California. The sample of teachers at the particular middle school was intentionally selected for this study to explore the teachers’ perceptions of culturally responsive strategies and how implementation of these strategies related to improved relationships between teachers and their African American and Latinx students in the 8th grade.

Instrumentation

Culturally Responsive Instructional Observation Protocol (CRIOP)

As a result of a research initiative by the 2014 Collaborative Center for Literacy Development (CCLD) that explored better literacy instructional practices in elementary schools, data collected revealed which instructional practices incorporated during the project improved overall student achievement. However, even with improvements in the overall student

achievement, there were still gaps in achievement between students from middle-class White backgrounds and students from culturally and economically diverse backgrounds. Researchers made note of the culturally responsive instructional practices they observed in the elementary classrooms being studied. By gathering culturally responsive instructional practices, they developed the Culturally Responsive Instruction Observation Protocol (CRIOP) as an instrument and instructional framework to assess and support instruction (Powell, Cantrell, Malo-Juvera, & Correll, 2016).

The CRIOP is comprised of eight components of culturally responsive instructional strategies and interventions. These eight pillars of culturally responsive classroom teaching practices are classroom relationships, classroom environment, family collaboration, assessment, curriculum, instruction/pedagogy, discourse, and socio-political consciousness. The utilization of the CRIOP tool, which is based on the eight pillars of culturally relevant practices (CRP), provides a framework for instruction guided by CRP research-based practices. The CRIOP instrument consists of 24 specific indicators of culturally responsive practices. Each indicator provides both examples of culturally responsive classroom practices and non-examples seen in non-responsive classrooms. Classroom observations are the primary data source for the instrument. Using the CRIOP, the observation data were analyzed by pillar. Using a Likert rating scale, the holistic score for each pillar was assigned a score between zero and four, where 4 = The classroom was consistently characterized by culturally responsive features, 3 = The classroom was often characterized by culturally responsive features, 2 = The classroom was occasionally characterized by culturally responsive features, 1 = The classroom was rarely characterized by culturally responsive features, and 0 = The classroom was never characterized by culturally responsive features.

During the first year of the evaluation of the CRIOP, reliability analyses yielded Cronbach's alpha values of .8 and .94 (Malo-Juvera et al., 2013) and .78 and .76 (Powell et al., 2016). In the second year of the evaluation, the fall administration of the CRIOP (holistic) had a Cronbach's alpha of .61, while the spring administration of the CRIOP (holistic) had a Cronbach's alpha of .77. At the conclusion of the second observation, the inter-rater agreement on the CRIOP holistic pillars for the two-field research was 86% (CRIOP Program Evaluation, 2014).

As the observations were conducted, the lessons were scripted. After the completion of the observations, field notes were fleshed out and reviewed for evidence of each specific "pillar" of culturally responsive indicator (CRI). This study explored CRI descriptors of seven of the eight pillars of culturally responsive instruction: (1) classroom caring and teacher dispositions, (2) classroom environment, (3) practices during the assessment process (4) curriculum planning, (5) pedagogical practices, (6) instructional conversations, and (7) sociopolitical consciousness. The pillar of family collaboration was used in this study due to time restrictions and of this study and limited access to families. To assist in collecting and analyzing the data from the observations, field notes were numbered to correspond to the pillar they represented.

Participant interviews were conducted no later than five to seven days after each observation was conducted. Interviews were scheduled after school to minimize interruptions or distractions. The interviews were audio recorded and semi-scripted to capture the participants' responses.

CRIOP Post-Observation Teacher Interview Protocol

During the interviews, fourteen questions were asked. Each interview was audio recorded and had a 60-minute timeframe. The interviews were conducted after school in the teachers' classrooms to ensure that participants could focus fully on the interview questions and feel comfortable sharing "in-depth" experiences. The interview questions were devised to illicit information I could not see during the observation. The questions were open-ended which allowed each teacher participant to share their thoughts. See Appendix B for the full interview set of questions.

Data Collection Process

The data collection phase consisted of a series of four 30-minute observations per teacher, after which a semi-scripted interview was conducted. The dates of the observations as well as the start and end times of each observation were recorded. The teacher observations took place in the teachers' classrooms during regularly scheduled mathematics instructional time. No observations were made of additional instructional time such as mathematics intervention classes, after school tutorial sessions, or one-on-one student tutorials. The teacher was observed instructing students regularly assigned to the class period at their assigned grade level only.

Observations of the teacher participants were conducted only in the classroom, with the teacher instructing students without any additional support from staff members. Classroom observations were randomly scheduled within the specific one-month timeframe of the study. The teacher participants were observed only while teaching a mathematics lesson. During the classroom observations, I observed the classroom teachers as they taught a mathematics lesson and interacted with their students. I did not interrupt the lessons. During the observations, I took notes about each teacher's lesson and then cross-referenced the notes with the CRIOP after the

observations. After the observations of all four teachers were completed, the interviews took place. The interviews were held in the classroom of each teacher at a convenient time for the teacher. The scripted interview questions listed in this chapter were asked during the interview. Each interview was recorded after gaining the permission of the teacher. The audio recording of the interviews allowed me to take thorough notes.

Data Analysis

After the audio recorded interviews were completed and transcribed for all three teachers, qualitative data analysis was conducted. Since the CRIOP list seven pillars that were used in the observations, these same pillars were used to code for the interviews. Based on the responses from the interviews and observations, there were four emerging pillars which I call themes. The emerging themes were developed based on all teacher participants sharing similar practices based on the themes. The emerging themes derived from the observations; the feedback collected was documented to analyze the use of culturally responsive strategies in the 8th grade mathematics classroom.

In order to develop emerging themes across the three teacher participants, I analyzed observation and teaching data concurrently. I was able to look at each teacher and follow the observation notes and transcript from the interview. I placed all three teacher participants name on three separate pieces of bulletin board paper. Since the pillars in CRIOP were separated by numbers, as I went through the observation notes and interview transcripts when I saw an example of one of the pillars, I entered the CRIOP code. After coding, I also described the example based on the culturally responsive indicators and the examples/ non-examples listed. As I coded separately for each teacher, I was able to find the similarities and differences among the three teacher participants.

Data triangulation encourages the collecting of data from multiple sources (Yin, 2018). Collection of data from multiple sources strengthens the validity of a study by developing convergent evidence. The multiple sources of evidence collected formed the rationale for doing an in-depth case-study of a phenomenon in a real-world situation. Based on the collected multiple sources of data, the various themes and pillars identified in the CRIOP assisted with discussing the evidence found. With the discussion of the evidence, I sought emerging trends, patterns, and similar concepts needed to analyze the data.

Limitations of the Study

An obvious limitation of the study was that I only observed three teachers and their classrooms. With this relatively small sample, the findings cannot be generalized to other school districts. Lack of time was another limitation as this study was conducted in a middle school that switched classes on a block schedule, preventing the observation of the same students in the same period. In the original study using the CRIOP, the research was conducted in various elementary schools where it was possible to observe the same classes daily since students did not switch classes. Another limitation was not using all eight of the CRIOP pillars. The pillar of family collaboration was not analyzed due to the one-month time allotted for my study and a lack of access to families.

Positionality

The research study was conducted at the only middle school in the school's district. At the time of data collection, I was an employee of the school district but worked as an Assistant Principal at the only high school in the district. My researcher role was assisted by my role as an Assistant Principal at the high school, which afforded me easier access to data and knowledge about students and teachers. Due to my position at the high school of being an administrator,

potential bias may have restricted the willingness of teachers to share their true perceptions of racially diverse students during the interviews. Due to my role as an administrator, I was concerned that participants would not be forthcoming about their experiences with culturally relevant pedagogy. Also, teachers may not have been willing to reflect on their pedagogy and may have been resistant to offer suggestions for improvement.

With the given data of the academic gap between ethnically and linguistically diverse students in the school, I would have expected the teacher participants to want to know more about culturally responsive practices with intentions of trying to mitigate the achievement gap in the area of mathematics. However, due to the teacher participants not being trained on the importance of developing a culturally responsive classroom, the enthusiasm to want to know more was not evident. This is consistent with one of the tenets of critical race theory which is interest convergence. During the interviews, the teacher participants could not give a solid response on how implementing culturally responsive practices would lead to student success.

As an African American female who worked as an administrator in the school district where I conducted my study and the school district was celebrated as one of the most diverse school districts in the nation, I expected the teachers to be more knowledgeable about culturally responsive teaching practices and how these teaching practices could affect the outcome of student achievement. With the population of students being from various cultural backgrounds, without prompting or forcing professional developments in regards to culturally responsive pedagogy, my expectations consisted of the teacher participants seeking out information on how to teach students who are culturally and linguistically different from them. To no avail, the teacher participants were not knowledgeable to culturally responsive teaching practices.

Nevertheless, after the interviews, the transcripts which discussed their viewpoints and knowledge based in regards to culturally responsive pedagogy negated my expectations.

CHAPTER 4 - FINDINGS

The purpose of this chapter is to report the findings of my qualitative study through observations and interviews. This chapter discusses how the analysis ties back to the research questions. Restating the problem, African American and Latinx students in 8th grade are not proficient in mathematics. As described in the 2018 summary report GDTF II, there is a vital need to examine the overall achievement of California 8th grade African American and Latinx students in urban middle schools, especially in the content area of mathematics. Research illustrates that culturally responsive teaching is a way to reach minority students and enhance academic outcomes (Gay, 2000). Culturally responsive pedagogy is a teaching approach that merges students' cultures with the curriculum. However, the extent to which culturally responsive practices are used in 8th grade mathematics classes is unclear. Thus, this qualitative study is guided by two research questions.

RQ1: To what extent do teachers use culturally responsive practices as measured by Culturally Responsive Instruction Observation Protocol (CRIOP) when working with racially diverse students in 8th grade mathematics classrooms?

RQ2: How do teachers describe building relationships in the classroom with their students?

My research consisted of observations and interviews of three 8th grade middle school mathematics teachers at Crooked Valley Middle School in Los Angeles, California. For the past three years, the ethnicity of the students at CVMS has been diverse (see Table 5 for student demographics). During my observations, the teachers were teaching 8th grade mathematics (traditional 8th grade course) and/or Algebra 1 (advanced course) depending on the day and time

of the observation. My observations consisted of 4 separate observations with each teacher. The observations lasted for at least 60 minutes over a four-month time period during the first semester of the school year. The observations were four cycles per teacher. For the sake of confidentiality, pseudonyms are used to protect the confidentiality of the teachers. The pseudonyms used to name each teacher were Steve, Mary, and David. Observation data were analyzed based on the CRIOP and utilized a descriptive analysis approach.

Table 4

CVMS – Student Distribution by Ethnicity – 3-Year Report

Years	White	Latinx	African American	American Indian	Asian	Filipino	Pacific Islander	2 or More Races
19-20 N=1650	23.58%	41.33%	12.48%	.12%	8%	1.27%	.30%	12.91%
18-19 N=1631	24.2%	38.5%	13.7%	.3%	10.8%	1.6%	.1%	10.1%
17-18 N=1645	25.9%	36.8%	14.5%	.4%	11.1%	1.7%	.2%	9.2%

Description of Participants

A brief description of each teacher participant, Steve, Mary and David, follows.

Steve's Background

Steve was a 28-year old Caucasian male who taught Math 8, Geometry, Science 6, and Algebra. Steve received his Bachelor of Business Administration at the University of Texas at Austin. Steve had taught at Crooked Creek Middle School for the past two-and-a-half years. Steve was a native of Houston, Texas but lived in the Crooked Valley Middle School community for two-and-a-half years. For the past year, Steve taught Algebra 1 and Math 8.

Steve's Classroom Context

The classes that I observed Steve teaching were all 8th grade mathematics. This is the traditional 8th grade mathematics class that all students in general education took in the 8th grade unless the student was on the advanced track. On the advanced track, students had the opportunity to take Algebra 1 or Geometry. A significant number of Latinx students were enrolled in two of the three classes I observed (Period 2 and Period 4). The White and African American ethnic distribution was comparable for those same classes. Also, in both of those class periods, the Asian, American Indian, and Filipino students' population were comparable. The ethnicity distribution of Steve's 6th period class was different from his 2nd and 4th period classes. His 6th period class had a greater number of White and African American students compared to Latinx students. In the 6th period, there were no American Indian or Asian students. The Filipino ethnic distribution was approximately the same in each class period (see Table 6 for Steve's classroom demographics).

Table 6

Steve - Percentage of Students Observed by Ethnicity & Courses

	White	Latinx	African American	American Indian	Asian	Filipino	2 or More Races
% of students observed per class Math 8 2nd period N=30	10%	43%	7%	3%	20%	3%	13%
% of students observed per class Math 8 4th period N=28	14%	39%	14%	4%	18%	4%	7%
% of students observed per class Math 8 6th period N=31	35%	6%	23%	N/A	N/A	3%	N/A

Mary's Background

Mary was a White 59-year old mathematics educator. She had a Bachelor of Science in Mathematics. Mary had lived in the CVMS community all her life. She had been a student at CVMS when it had been named a junior high school. As a member of the community, Mary's children also attended CVMS. Mary's commitment to the school and its students was demonstrated by her longstanding membership in the community and by allowing her own children's lives to be shaped by the educators at CVMS. Mary has been a teacher for the past 33 years at CVMS. This is the only school at which she ever taught. At CVMS, Mary taught every mathematics course there is to teach in middle school. She had taught 6th grade mathematics, 7th

grade mathematics, 8th grade mathematics, Algebra 1, and Geometry. Mary had also been a mathematics coach to new teachers.

Mary's Classroom Context

Each of the classes that I observed Mary teaching was an Algebra I course. This course was one of the advanced courses for 8th graders. As shown in Table 7, the ethnic breakdown of Asian and White students in these courses surpassed the number of African American and Latinx students. However, due to one of the ethnicity options being "two or more races," many students who were African American and Latinx could be designated under this ethnicity. The ethnic category of "two or more races" skewed the data when exploring specific ethnicities.

Table 7

Mary - Percentage of Students Observed by Ethnicity & Courses

	White	Latinx	African American	Asian	Filipino	2 or More Races
% of students observed per class Algebra 1 1st period N=29	28%	10%	7%	20%	N/A	34%
% of students observed per class Algebra 1 2nd period N=35	37%	17%	N/A	14%	3%	29%

David's Background

David was a 29-year old Caucasian male who had taught math for the past four years. The subjects that David taught were math education 9th -12th (small school), Math 7, and Math 8. David received his bachelor's degree from Sacramento State University and graduated in 2016.

He grew up in a suburban community outside of Berkley named East Bay/Walnut Creek. David has only taught at Crooked Creek Middle School.

David's Classroom Context

During my observations of David's classes at CVMS, he taught Algebra 1 and Math 8. The Algebra 1 class was very different from the Math 8 class. The students in the Algebra 1 class were more focused on the lessons taught and appeared more actively engaged. In the traditional 8th grade mathematics class, Math 8, students socially communicated more and were less focused on the lessons. The ethnic breakdown of both classes was slightly different. In the Algebra 1 class, there were greater numbers of White and Latinx students compared to African American and other ethnicities. In the Math 8 class, the percentages of students identified as White, Latinx, and "two or more races" were similar.

Table 8

David – Percentage of Students Observed by Ethnicity & Courses

	White	Latinx	African American	American Indian	Asian	Filipino	2 or More Races
% of students observed per class Algebra 1 5th period N=34	35%	26%	6%	N/A	6%	3%	24%
% of students observed per class Math 8 6th period N=33	27.3%	30.3%	3%	3%	12.2%	N/A	24.2%

Observations

During the observations, I collected field notes which were used to capture the culturally responsive features exhibited by each teacher. As described in Chapter 3, the instrument used to measure the culturally responsive features was the Culturally Responsive Instruction Observation Protocol (CRIOP). The CRIOP is an instructional framework and measurement tool designed to assess and support instruction in seven components of culturally responsive instruction: (a) assessment practices, (b) classroom care and teacher disposition, (c) classroom climate/physical environment, (d) curriculum/planned experiences, (e) discourse/instructional conversations, (f) pedagogy and instructional practices, and (g) socio-political consciousness/multiple perspectives. There are 31 specific indicators of culturally responsive practices, with examples and non-examples included for comparison and evaluation. See table 9 for Holistic scores for each teacher participant.

Table 9

Teacher Participants of Overall Average CRIOP Holistic Scores based on the Observations

	Overall Average of Holistic Scores – Observations
Steve	2.25
Mary	3.75
David	3.8

Steve

Steve's Holistic Score

Steve's average holistic score for all four observations indicated that Steve was *occasionally* characterized as a culturally responsive teacher. Out of the four observations, Steve scored similar average scores, 3.4 and 3.5, for two of the observations. During these two observations, Steve's scores on four of the seven pillars were his highest scores. Steve's instruction was consistently characterized with the indicators of (b) classroom caring and teacher dispositions, (c) classroom climate/physical environment, (d) curriculum/planned instruction, and (e) discourse/instructional conversation. Steve demonstrated examples of the CRIOP indicators during the observations. During both of my observations of Steve in November, his classroom was *rarely* characterized by culturally responsive features. For the pillars of (a) assessment practices and (g) sociopolitical consciousness/multiple perspectives, he scored zero for both observations. During the two observations in November, for the pillar of (f) pedagogy/instructional practices, Steve's instruction was characterized as *rarely* demonstrating culturally responsive features.

Table 10

Steve - CRIOP Observation Scores

	Date	**Date**	**Date**	**Date**	**Average for each pillar**	
Culturally Responsive Pillar	**9/25/19**	**11/4/19**	**11/13/19**	**12/11/19**		
Assessment Practices	1	0	0	2	.75	**Average Holistic Score for all 4 Observations**
Classroom Caring and Teacher Dispositions	4	0	4	4	3	
Classroom Climate/Physical Environment	4	4	0	4	3	**2.25**
Curriculum/Planned Experiences	4	2	2	4	3	
Discourse/Instructional Conversation	4	0	1	4	2.25	
Pedagogy/Instructional Practices	3	1	1	4	2.25	
Sociopolitical Consciousness/ Multiple Perspectives	4	0	0	3	1.75	
Average Holistic Scores by Date	3.4	1	1.1	3.5		

Summary of Steve's Observations using the CRIOP Tool

During the initial observation, students learned about using mathematical statements. Students were asked to look at the math words that were placed on the overhead projector such as "4 is less than a number that equals 2." Students were asked to identify how to develop this equation. Steve encouraged his students to work with their partner to develop the equations. This was an example of Steve allowing students to work with their partners to collaborate throughout the instruction. This example was indicative of the (f) pedagogy/instructional practices pillar on the CRIOP. Before Steve started asking questions, he reminded students of prior lessons where

they had learned about *math text* and what the text means. At that moment, he was building on the prior learning of the students and inviting them to make a connection with the lesson taught. Learning experiences built on prior student learning experience and those that invited the students to make connections exemplified the (d) curriculum and planned experiences pillar of the CRIOP. This example was connected to the indicator of the curriculum and planned learning experiences uses the knowledge and experience of students.

Steve also asked the students questions such as "If the problem reads 4 is less than, how do you write this in an equation? Does it matter if 4 is before the subtraction sign or after? If so, explain your reasoning." Once the questions were asked, students engaged in discourse about whether the number 4 would go in the front of the subtraction sign or after the subtraction sign. Steve built and expanded upon student talk in an authentic way while using an investigative process to promote student engagement and communication among the students. Since Steve encouraged student talk, this demonstrated the (e) discourse/instructional conversation pillar. The indicator connected to this example was that the teacher built and expanded upon student talk in an authentic way. Utilizing the investigative process fell under the pillar of (f) pedagogy/ instructional practices.

The teacher allowing students to collaborate with other students was an example of the (e) discourse/instructional conversation pillar. Steve promoted discussion and collaboration among the students as he shared control of the classroom discourse. This example is of the pillar discourse/instructional conversation and indicator of the teacher sharing control of classroom discourse with students. As the students talked, Steve demonstrated active listening and responded appropriately to the students' comments. This was another example of a culturally responsive classroom practice based on the pillars and indicators of the CRIOP. The pillar for

this example was discourse/instructional conversation, which is an indicator of how a teacher builds upon and expands upon student talk in an authentic way. As Steve modeled active listening, he demonstrated an example of the teacher learning with the students, which is connected to the (f) pedagogy and instructional practices pillar.

Similar to the first observation in September, Steve's average score on his fourth observation in December was 3.4. The pillars of classroom caring and teacher dispositions, classroom climate/physical environment, curriculum/planned experience, discourse/instructional conversation, and pedagogy/instructional practices were observed as *consistently* characterized in Steve's classroom. The lesson was on slope intercept form. During this observation, Steve encouraged his students to share about their family members' occupations, such as the jobs held by their mother, father, or guardian. As he was asking students about this, he called on students by name to participate. Using the strategy to call students by name is a direct example of culturally responsive teaching. This strategy is consistent with the pillar of classroom caring and teacher dispositions. He maintained positive rapport with the students instead of just speaking to them in general without using their names. Not only did he call students by name, but he also used an inviting and warm tone with students to encourage them to participate in the dialogue. After the students spoke about the occupations of their parents or guardians, Steve asked the students to choose what they would like to do to earn money. Steve's objective was for students to calculate how much they could earn in a week and then how much it would cost to get started in whatever profession they chose. Steve asked the students, "If you're babysitting, you'd have to get a background check which would cost approximately $400. But then you can make like $25 per hour babysitting." Steve explained the $400 being the y-intercept of the equation and the $25

being the slope. He explained to the students that the y-coordinate would be the outcome, and the x-coordinate would be the number of hours worked.

Later in the lesson, Steve focused on a break-even analysis and he incorporated a yearly annual income projection. He directed the students to develop an equation based on the information they had collected on their projected job, and he assisted the students with an x/y table. Students were able to determine if their goals were realistic or not. Once the students saw the reality of using slope intercept form notes to calculate their future projected income, the students became engaged in the project. One of the students recognized that if he worked 70 hours a week, he would make $190,000 annually. Some of the students could not calculate the mathematical skills due to their lack of technical knowledge. Working together in groups, the students were able to remain engaged in the project despite their varying academic levels in mathematics.

With this lesson, Steve demonstrated three of the CRIOP pillars. According to the CRIOP, the observed evidence of the pillar curriculum/planned experiences were detailed using the following three indicators: (a) the curriculum and planned learning experiences use the knowledge and experience of students, (b) the curriculum and planned learning experiences integrate and provide opportunities for the expression of diverse perspectives, and (c) the curriculum and planned learning experience includes issues important to the classroom, school, and larger community. The observed example also showed evidence of the pillar of discourse/instructional conversation. The culturally responsive indicators that addressed this pillar for Steve's example lesson were that the teacher built upon prior experience, encouraged students to talk in an authentic way, shared control of the classroom discourse with students, and provided structures that promoted student collaborative talk.

Lastly, the pedagogy/instructional practices pillar was observed during this observation. Not only were the students able to learn but the teacher learned as well. The teacher was able to learn diverse perspectives along with the students. Steve allowed his students to collaborate with other students about their perceptions of where they would want to work to earn money and how many hours of work would be needed to make the income they desired.

From Steve's responses and tone, it appeared that he created a climate where students felt comfortable asking questions that would further their learning. The indicator related to this example is the teacher creating a learning atmosphere in which students and teachers feel respected and connected to one another. During his interview, Steve stated, "It's like the more that students can communicate with you, the better you're going to be as a teacher." Open lines of communication between the students and teacher helped to develop a positive relationship. As Steve listened attentively as the students shared their parents' or guardians' occupations, he encouraged and advocated for each of his students to speak the truth about their families regardless of the occupation. This also the pillar of classroom caring and teacher dispositions, which is demonstrated as a culturally responsive feature where the teacher is communicating high expectations for all students. Steve also allowed the students to work in collaborative group settings using strategies such as think, pair, and share. This strategy afforded students the opportunity to collaborate with other students and to actively participate in the instruction by maximizing participation and engaging students in comprehending the material. However, as students worked in the collaborative group setting, a couple of students made comments to other students about their parents'/guardians' occupations that were not productive for the learning environment. Students laughed and stated, "What is a technician? Sounds like a disease." Steve immediately addressed the issue and reminded the students of the agreed upon classroom norms

that they had worked on collectively. Steve addressed biased comments related to the pillar of classroom caring and teacher dispositions. He explained to the students that different occupations were discussed with this activity which was a diverse perspective on occupations. The agreed upon classroom norms were connected to the classroom climate/physical environment pillar. This was an example of the indicator of the physical materials and furnishings promoting shared ownership of the environment. Even though Steve addressed students who had made negative comments to each other, he reminded them of the agreed upon norms that the entire class had developed.

During the two observations rated as *often* characterized as culturally responsive, Steve supported students helping one another in class. Through this instructional practice, Steve provided structures that promoted student collaborative talk. He stated to students that it is important for students to work with their peers as well as to self-advocate if they were not understanding a problem. This was an example of the pedagogy/instructional practices pillar where the teacher allows students to collaborate with other students. This was also an example of the teacher creating a learning atmosphere in which students and teachers feel respected by and connected to one another by students being able to provide peer support and assistance. This example is aligned to the pillar of classroom caring and teacher dispositions.

Regarding the pillar of curriculum/planned instruction, Steve *often characterized* demonstrated that he was well prepared and that the learning experiences he offered built on prior student learning. This learning experience afforded students the opportunity to make educational connections with previous and current lessons. Steve also provided plentiful opportunities throughout the learning experiences for students to express their diverse perspectives through class discussions.

During both of my observations in November, Steve's actions were *rarely* characterized by culturally responsive features. He blew a whistle to get the students' attention which is a non-responsive example of the pillar of classroom caring and teacher disposition; this practice does not show an ethic of care based on CRIOP. During each of these observations, the students' behavior was disruptive the entire class period. During one of the November observations, Steve ignored the disruptive behavior of the students. Students were making rude comments and using expressions of prejudicial statements toward other students in the classroom. These students said *shut up* and *you are dumb* and laughed at other students for working diligently on the assignment. Steve continued to teach over the loud noise of the students. This was a non-example of a culturally responsive classroom connected to the pillar of classroom caring/teacher dispositions. The example given with the CRIOP tool is that the teacher ignores some students and does not balance student participation. The classroom environment during each of the November visits was less structured compared to the two visits where the observations had indicated a culturally responsive classroom. While his overall score demonstrated he *consistently* demonstrated his ethic of care, there were moments during the November observations that were not examples of culturally responsive instruction.

Mary

Mary's Holistic Score

Overall, Mary *consistently* demonstrated characteristics of culturally responsive features during the observations. The observed actions in Mary's classroom exuded a consistently culturally responsive classroom. Mary's delivery of instruction was also deemed as *consistently* culturally responsive based on the CRIOP rubric. Mary's average holistic score for all four observations was a 3.75 out of 4. The pillar that reflected Mary as *consistently* being

characterized as culturally responsive pedagogy was classroom caring and teacher dispositions. One of the indicators that connects to this pillar is that the teacher demonstrates an ethic of care. Some of the examples of this indicator include the teacher differentiating management techniques in the classroom, the teacher referring to students by name, and the teacher consistently modeling respectful interactions with students in the classroom. Mary stated, "I can't treat them equally because they're not equal. But I do treat them fairly."

The next indicator attached to the pillar of classroom caring and teacher dispositions was that the teacher communicates high expectations for all students. This was accomplished by Mary differentiating instruction, recognizing students' various backgrounds, advocating for all students, and consistently demonstrating high expectations for all students' academic achievement. The next indicator for the pillar of classroom caring and teacher dispositions involved the teacher creating a learning atmosphere in which students and teachers feel respected and connected to one another. This was shown when the students felt comfortable asking questions that could further their learning as well as by knowing the class routines and supporting them. The students also responded to one another in a positive way by affirming and supporting each other's work. Students were asked during one of the observations to exchange their classwork with their peers. Students were given the direction to critique and analyze the work of their peers in the form of an *error analysis*. Students were to discuss the errors and how the answers were computed. The last indicator, which was a bridge to the pillar, was that the teacher actively confronted instances of discrimination. The examples were that the teacher confronted students' biases and acts of discrimination in the classroom actively and the teacher encouraged a diverse perspective.

Table 11

Mary - CRIOP Observation Scores

	Date	**Date**	**Date**	**Date**	**Average for each pillar**	
Culturally Responsive Pillar	**9/26/19**	**11/8/19**	**12/6/19**	**12/11/19**		
Assessment Practices	4	3	4	4	3.25	
Classroom Caring and Teacher Dispositions	4	4	4	4	4	**Average Holistic Score for all 4 Observations**
Classroom Climate/Physical Environment	4	3	4	4	3.75	
Curriculum/Planned Experiences	4	3	4	4	3.75	
Discourse/Instructional Conversation	4	3	4	4	3.75	**3.75**
Pedagogy/Instructional Practices	4	3	4	4	3.75	
Sociopolitical Consciousness/ Multiple Perspectives	4	n/a	4	4	4	
Average Holistic Scores by Date	4	3.2	4	4		

Summary of Mary's Observations using the CRIOP tool

Based on the classroom observations and scores from the rubric, Mary *consistently* displayed culturally responsive features across all four observations. On three of the four observations, she scored at the highest level on each pillar. According to the CRIOP rubric, Mary's actions *often* characterized a culturally responsive classroom connected to the pillar of climate and physical environment. The materials that were needed for class for this particular observation were readily available for all of the students. Students were sitting in groups of four which made it easier for them to work together. The chrome book cart, which consisted of a set of 35 chrome books, was in the back of the classroom. There were 28 students present in the class. Under the pillar of assessment practices, Mary demonstrated only one specific example of culturally responsive features. Mary was able to provide multiple options for students to

represent their knowledge and skills. During one of her observations, she taught the lesson on graphing quadratic functions. After Mary explained how to solve quadratic functions, she allowed the students the opportunity to use drawings and a brief reasoning as a descriptor to show their knowledge of how to solve the problems without her assistance. Students were to explain how to find the intercepts and vertex of the parabola as the starting point. Mary allowed the students to work in pairs to find the axis of symmetry. Later, she asked students to discuss what the axis of symmetry meant to them. Students were also given the opportunity to use multiple perspectives to demonstrate their knowledge of the lesson. Students were to factor the quadratic equation, use an x/y table, and then draw the graph. Mary encouraged students to use writing utensils in multiple colors to differentiate various parts of the quadratic functions.

Throughout the observations, Mary scored the highest rating (*four*) for the pillar of classroom caring and teacher dispositions. Mary mentioned:

> And if I can build that excitement and get them interested, I think that's where the relationship comes. They also know that I care. That is super important. More important than the math that I'm teaching is they know that there's something going on with them that I care and that I know it's hard to say, but they are much more important than the material I'm teaching. (personal communication, January 27, 2020)

Mary was adamant to show that she cared for her students. Her disposition and demeanor allowed students to see her love for math and for her students. Under the pillar of classroom caring and teacher dispositions, there are four indicators listed. The first culturally responsive indicator is that the teacher demonstrates an ethic of care. Mary differentiated her explanation to meet the needs of all students. She explained the problem the traditional way by using a direct method. After she gave a brief lecture, she used graphs to show the differences of positive and

negative parabolas on the overhead. While drawing the various graphs, she depicted the different graphs with multiple colors.

Mary also communicated high expectations for all students. Some of the examples given for this indicator are that the teacher differentiates and advocates for all students. Mary recognized that all of her students were not at the same academic level. In order for Mary to provide each of the students the essential standards for the lessons, she differentiated the instruction to meet the needs of all of the students. During one of the observations, I observed Mary teach the lesson in three ways. She reiterated her lesson by using a direct method of lecturing, drew graphs on the board with labels of the various parts of the equation, and allowed students to utilize a computer program to develop the graphs. Since Mary restructured her teaching, she recognized the students' diverse learning styles and adjusted her lesson.

Mary also advocated for all students by balancing student participation. As she was continuously seeing the same hands raised, she used a calling card random system to make sure she was checking for understanding from all students in the class. Mary wanted to make sure all students were engaged in the daily instruction. The next indicator described the teacher's willingness to create a learning atmosphere in which students and the teacher would feel respected and connected to one another. Mary stated, “My motto in my classroom is to always stay humble and remain kind.” With Mary’s positive dispositions about her classroom and students, she was able to sustain a mutual level of respect. During the observations, Mary encouraged students to speak freely about the subject matter. Students did not hesitate to ask questions to deepen their learning. Mary also encouraged students to work with their elbow partner to discuss the reason for the parabola increasing or decreasing. She asked the students to explain their reasoning to their partner.

David

David's Holistic Score

David scored a four, which is the highest possible score, on five of the seven pillars listed in the CRIOP. The scores of four indicated that David aptly demonstrated numerous characteristics of culturally responsive features. Throughout all four of the observations, David's average holistic score was 3.8. All of his observation scores were consistently within the same range. The pillars on which David scored a four were assessment practices, classroom caring and teacher dispositions, classroom climate/physical environment, curriculum/planned experiences, and discourse/instructional conversations. Within each of these pillars, the CRIOP detailed specific indicators and examples that demonstrate culturally responsive features. Regarding the other two pillars, David scored 3.25 for the pillar of pedagogy/instructional practices and 3.33 for the pillar of socio-political consciousness/multiple perspectives.

Table 12

	Date	Date	Date	Date	Average for each pillar	
Culturally Responsive Pillar	**11/4/19**	**11/8/19**	**11/13/19**	**12/11/19**		
Assessment Practices	4	4	4	4	4	**Average Holistic Score for all 4 Observations**
Classroom Caring and Teacher Dispositions	4	4	4	4	4	
Classroom Climate/Physical Environment	4	4	4	4	4	
Curriculum/Planned Experiences	4	4	4	4	4	**3.8**
Discourse/Instructional Conversation	4	4	4	4	4	
Pedagogy/Instructional Practices	3	3	4	3	3.25	
Sociopolitical Consciousness/ Multiple Perspectives	4	n/a	3	3	3.33	
Average Holistic Scores by Date	3.8	3.8	3.8	3.7		

Summary of David's Observations using the CRIOP tool

David *consistently* was characterized as a culturally responsive teacher based on the indicators that were observed. From my initial moments of observing David, I noticed him standing at the door before class started to greet the students. When I spoke to David, he indicated that developing relationships outside of class was just as important as developing relationships with his students inside the classroom. He stated, "I think you have to build relationships in the in-between times and in the hallways to have those funny moments and even after class." In each of the observations, David demonstrated the culturally responsive pillar of assessment practices. David's instruction was *consistently* characterized by culturally responsive

features due to the clear and direct feedback that he gave students. An example of assessment practices that David exuded in his lessons was that he wrote clear and direct feedback on all tests, quizzes, classwork, and homework for his students. As I observed David's classes, I sat next to students and noticed the written feedback on the work that students had turned in to David. The feedback allowed students the opportunity to know what they needed to do to get the problem correct. He also wrote questions next to certain problems on the students' assessments when he wanted to know more about their answer or needed clarification. He walked around and responded to the students' work by circling wrong answers and asking questions such as "why did you divide both sides of the equations by -4?"

For the pillar of classroom caring and teacher dispositions, David also scored a four. During the observations, David *consistently* called students by name every time he called on a student to answer a question. One of the indicators for this pillar is that the teacher demonstrates an ethic of care by calling students by name. David made sure to personalize language with each of his students during the observations. He also consistently modeled respectful interactions with students in the classroom. These interactions were conversations that created equitable relationships between David and the students as well as developed and maintained strong bonds with his students.

During one of the observations, David expressed concerns about students choosing not to practice their mathematics problems at night. David created a learning environment where he set high expectations for all of his students in and outside of the classroom. He expected each of his students to complete their mathematics schoolwork outside of class. On the whiteboard in the classroom, there was a particular area labeled homework/practice work based on the lesson. Also, David provided assignments where students could utilize technology by watching youtube

videos as well as provided worksheets as supplemental assignments. Not only did David create a learning environment where he set high expectations, but he also developed a learning atmosphere in which students could feel respected and connected to one another. An example of creating this type of learning atmosphere was exemplified by David creating an atmosphere where students felt comfortable to ask questions and students were encouraged to work with their peers to support one another in their learning. Peer-to-peer collaboration afforded the class an opportunity to engage in instructional discourse, which promoted extended talk and elaborated inquiry. This was a process of promoting critical thinking and reasoning. This is an example of the teacher sharing control of classroom discourse with students. This culturally responsive indicator is aligned with the pillar of discourse/instructional conversation. David also allowed his students to have choice in the assignments. David said:

> A typical day of teaching involves notes and practice where students have some sort of choice...the choice or at least illusion of choice made a big deal for how much I would participate in the classroom when I was in school. Anytime you give someone an option they can feel in control of their learning. (personal communication, February 5, 2020)

David consistently created a classroom environment where the students were able to work together as well as work as individuals. The classroom climate and physical environment of the class were inviting for all students and the physical environment was devised in a way where students were able to work in a collaborative setting. The desks were arranged where students had the opportunity to work as elbow partners, which is turning to a classmate whose elbows are close so they can engage in conversation about the lesson. This was an example of designing the space to foster collaboration. The physical environment of David's classroom was designed where all students were able to have constant access to the calculators and chrome

books during class. This was another example of the classroom climate and physical environment pillar.

During the observations, as the lessons transitioned from one task to the next, David allowed students to share their perspective about the curriculum. Students were able to express themselves and speak about utilizing various manipulatives to assist with reaching the answers. Students were able to use graph paper or a mathematics program on the chrome book to graph equations. This was an example of allowing students to use multiple ways to represent knowledge and skills. This assignment was on how to use the linear equation to identify the slope and y-intercept. After making these identifications, students were to graph the linear equation using the slope and y-intercept.

Summary of the Observations of all Three Teachers

Mary and David *consistently* demonstrated culturally responsive practices throughout all four of the observations. Both teachers displayed having a positive rapport with students. As the observations took place, Mary and David were cognizant of the students learning styles and used differentiated techniques in order to meet their needs. Students in both classes were encouraged to use collaborative groups to work on lessons. In both classrooms, the students seemed as if they were respected by the teachers as well as their peers.

As for Steve, all four of his observations were not as consistent as Mary and David. Two out of four of the observations Steve demonstrated culturally responsive practices *often*. During these two observations, Steve showed signs of trying to develop a rapport with students during based on the indicators of the CRIOP. However, the other two observations Steve's classroom was *rarely* characterized by culturally responsive features. During these observations, Steve's

classroom was noted as being *consistently* characterized by culturally responsive features connected with the pillar *classroom climate and physical environment*. The materials for class were in a location that was central for all students to utilize if needed.

Relational Aspects of Instruction

After analyzing the observation notes and interview transcripts, several themes were observed that were compelling to my research. The common themes that were observed the most were (a) use of personalized language, (b) humanistic approach to teaching, (c) communication, and (d) student-student collaboration. The themes observed are culturally responsive instructional indicators which are evidence of the CRIOP pillars. However, these themes are also integral in the relationship building process of instruction. Teachers are able to build relationships with their students by demonstrating each one of these themes in their daily instruction. All the themes identified are opportunities for teachers to develop relationships with students as they create learning atmospheres in which students feel respected and supported.

Throughout the qualitative data analysis process, data emphasized the three overarching pillars. The data gathered pointed to three pillars of the CRIOP that were consistently demonstrated among all three participants in their observations and interviews. These pillars were classroom caring and teacher disposition, discourse/ instructional conversation, and pedagogy/instructional practices.

The pillar of classroom caring and teacher dispositions has four culturally responsive instructional indicators of specific actions of the teacher. The indicators for this pillar are teachers demonstrating an ethic of care, communicating high expectations, creating a learning atmosphere in which students feel respected and connected to one another, and actively confronting instances of discrimination. The themes that emerged based on this pillar were (a)

use of personalized language, (b) humanistic approach to teaching, and (c) communication. The pillars of discourse/instructional conversation and pedagogy/instructional practices have common indicators. The indicators that are shared by both pillars include the teacher sharing control of their classroom discourse with students, the teacher providing structures that promote student collaborative talk, and the teacher allowing students to collaborate with other students. The theme that emerged based on these pillars was collaboration.

Classroom Caring and Teacher Dispositions

The pillar of classroom caring and teacher dispositions refers to practices where a teacher demonstrates an ethic of care with the students as well as creates an atmosphere where equitable relationships can be formed. The teacher uses a humanistic approach to teaching where positive connections are made. The teacher also uses personalized language to refer to the students. Another culturally responsive indicator under this pillar is that the teacher communicates high expectations for all students through insisting that the students complete their assignments on a consistent basis. The teachers also create a learning environment in which students and the teacher feel respected and connected to one another. Students feel comfortable asking questions and do not hesitate to speak to further their learning. Another indicator is that the teacher actively confronts instances of students speaking of discrimination in the class.

Personalized Language

In culturally responsive settings, the act of addressing students by their name is considered personalized learning. Teachers using personalized language place an emphasis on the correct pronunciation and spelling of the students' names. A teacher using personalized language with students affirms a student’s name and encourages the students to take pride in

their name. All three mathematics teachers demonstrated evidence of the use of personalized language.

During the final observation, Steve's lesson engaged students to share about their occupations held by family members such as their mother, father or guardian. As he asked students about the occupations of their parents/guardians, he called on students by their names to participate. After he received some examples of parent/guardian occupations, he asked students, "What career would you want to pursue when you become an adult?" This strategy of calling students by name is a direct example of culturally responsive instruction. This strategy is consistent with the culturally responsive instruction indicator where the teacher demonstrates an ethic of care. The pillar of classroom caring, and teacher dispositions is parallel with this example and the actions that Steve exuded during the observation.

During the interview with Mary, we discussed developing relationships with all of her students. She specifically talked about getting to know her students by correctly pronouncing their names. She stated:

> If a student has a name that is difficult to pronounce, ask them how to pronounce it. Continue to say it over and over again until you get it right. You do not want to call a student by a name that is wrong the entire year. (personal communication, January 27, 2020)

In the 33 years of her teaching career, Mary stated that she had worked hard on learning her students' names and making sure to pronounce them correctly regardless of how the name is phonetically spelled. This was an example of teachers referring to students by name and using personalized language with students.

During each of the observations, David called students by name every time he called on

a student to answer a question. On the 3rd observation, David used a calling card method where each of the student's names were on individual cards. He pulled the cards randomly and went through the entire stack of cards to make sure to get feedback from the entire class. David and Mary demonstrated the theme of personalized language by calling students by name.

Humanistic Approaches to Teaching

One of the themes that was discovered from the observations and post-observation interviews was that the teacher participants demonstrated a humanistic approach to teaching. A teacher exhibiting characteristics of humanistic perspectives in education is operating as an educator who is attentive to the needs and values of the students. Teachers who use this approach have empathy towards their students, are thoughtful in their interactions with their students without judging their viewpoints and show a caring disposition for the students. A teacher who demonstrates humanistic approaches shares aspects of their lives that are closely related to their students and their families. Each of the three teacher participants demonstrated a humanistic approach to teaching as evidenced by the practices discussed next.

During Steve's first observation, he taught the concept of translating math words to math equations. Steve spoke to the students about the directions and how he expected the students to complete the assignment. Steve drew a T-chart on the board to assist students with solving the problems. After he reviewed an example and gave the students the directions, he placed the students in groups. As the students worked on their assignments, Steve walked around to assist students with solving the problems. He encouraged the students to work as a team to solve the problems. As he spoke to the students, his demeanor was pleasant, and the students seemed comfortable with Steve. As students worked, Steve used an affirming gesture of fist bumping and

gave vocal praise to students for getting the problems correct. Steve encouraged his students by constantly affirming each student in various ways.

As described briefly above, during the fourth observation, Steve also encouraged his students by affirming their likes and dislikes for a specific project. As students worked on a lesson, Steve asked them to choose a career they would like to have in the future. Many students stated they wanted to become professionals such as doctors, engineers, attorneys, teachers, record producers, and dentists, to name a few. One of the students stated that he wanted to work for the city, becoming a garbage truck driver or a bus driver. Many of the students criticized this student for not choosing a career path such as the ones that they had chosen. Steve told the students who criticized the one student that this was not the acceptable way to interact with classmates. Steve redirected the conversation with the student who chose a city worker job and praised him for wanting to choose a blue-collar job. Steve explained to the class about white-collar and blue-collar jobs. He explained to the students that each type of job is beneficial for the economic growth of the country and is needed by all people. Steve did not judge this student for not choosing the professions that many of the other students chose. However, he listened to the student's viewpoint and showed that this job is needed just as the other jobs are. Steve's engagement with this student's choice showed that he was attentive to the student's choice of future employment. Steve took this opportunity to teach the students a new concept as well as modeling respectful interactions with his students in the classroom. Steve addressed the students who had criticized the one student who had chosen a blue-collar profession and he taught the class about a new concept. Based on the CRIOP criteria, for both observations, Steve created a learning atmosphere that encouraged a diverse perspective of thoughts from his students where students felt an ethics of care and were willing to speak their thoughts.

Mary was also asked about the strategies and practices that she used to assist with building student-teacher relationships. Mary responded:

> I really think if I can show my love of math and how much I will let them know I am a math geek. I am just happy to sit there with x's and y's and puzzles and if I can build that excitement and get them interested then that is where the relationship comes. (personal communication, January 27, 2020)

Mary also stated:

> They also know that I care. That is super important. More important than the math that I am teaching. They know that something is going on with them, but I care and I know that it is hard to say but they are much more important than the material I am teaching. (personal communication, January 27, 2020)

These quotes exemplified how Mary demonstrated an ethic of care. She modeled respectful interactions with her students by her disposition and demonstration of caring for them.

Mary described her educational experiences of once being a student at Crooked Valley Middle School many years ago. As Mary explained to her students that she was once a student sitting in the same seats as they were, she wanted the students to understand that she also was a student at Crooked Valley Middle School. Mary spoke highly of the fact that the students were aware that she had been a student at their middle school, citing it as one of the main reasons she was able to develop a positive student-teacher relationship. She also talked about her own children attending this school. Mary shared her personal stories with the students as a way to develop relationships with them. Not only did Mary share with her students about her family, she also shared with the students that she had been a member of the community for over 30 years. Due to Mary being a member of the community, she was able to develop a rapport with her

students and families. These examples showed Mary's ability to build relationships with students and families. The humanistic approach that Mary portrayed in these examples was a testament of her empathy for her students.

When I observed David the initial time, he was teaching a Mathematics 8 class. He taught a geometry lesson on multiple transformations. After students took notes on transformation, David asked the students to turn in their work on reflections and translations. When he asked for the work, only three students turned in their homework. David stopped the class and stated that he was going to have a "heart to heart" talk with the students. He said that when they do not complete the homework, it makes him feel sad. David explained to his class his expectations of completing their homework and the importance of doing homework. David let the students know how their actions, or lack thereof, affected him. I noticed how he showed his human side by letting the students know how he felt when they did not complete their homework. Based on the CRIOP, David communicated high expectations for all of his students by expecting that they complete their homework assignments.

After completing all four observations, open-ended interview questions were asked of David. During the interview, David described how he built relationships with students by greeting them at the door. He stated, "I forgot this was even a practice. I just do it. It feels natural at this point. I believe it just sets them off on the right foot." He added, "I think you have to build relationships in the in-between times of class." David spoke about the in-between times of the day where students were walking in the hallways and outside of non-academic settings. He explained that when students walk by him in the hallway, his intentions are to make eye contact with students and to always use these non-academic times to connect with students. This example demonstrated that David exuded a humanistic side, which is an ethic of care to students.

Communication

In a culturally responsive classroom setting, communication refers to dialogue between the teacher and students as well as students communicating with each other. This dialogue can be verbal, non-verbal, and written. Communication in the context of culturally responsive instruction occurs when the students feel no limitations on engaging in dialogue with their teacher and classmates about instruction or about their cultural backgrounds. Being able to communicate freely can allow relationships to evolve between the teacher-student and the students and their peers. Throughout the observations, the teachers communicated with their students and the students communicated with their classmates.

Steve provided an example of how he encouraged the students to communicate with one another to solve a problem. Steve stated:

> I have been having them [students] do warm-ups that are non-content specific and then reading and sharing with each other. And then I will either have a designated person share the table's responses and then work and listen and speak or I will have each of them read their responses. It is very interesting to hear their responses. (personal communication, January 16, 2020)

As his students communicated their likes and dislikes during discussion, Steve encouraged them to respond to one another in a positive way. He made sure students were verbally affirming of students' likes and dislikes and were not making negative comments toward others. As students shared with the class after sharing with the group, Steve supported the students and the members at the table by posing questions which sparked more conversations among the group. Steve asked the students, “Would you rather see word problems written about sports or about politics?” In the groups, students were able to communicate their likes and dislikes about the topics of sports and

politics. Steve created a learning atmosphere in which students felt respected and connected to one another by their demonstration of sharing during instruction.

Mary, too, enabled her students to have a voice through communication about their cultural differences. She expressed during the interview that despite the cultural differences that she and her students have, she embraced their differences. Mary stated:

> I can think of cases where I have students celebrating their holidays and the students fast from food for a month. I talk with them about: How do you do that? What does it mean to you? What is the purpose? You are up at 4 am this morning. They know I am interested in their culture. And not putting it down but asking them if they need a break or to go and get water. Just to be aware of the different practices that they have. To be aware of how students might act in their culture at church. In cultures, by calling out, I have to understand that is what they may be doing in class - call and response. (personal communication, January 27, 2020)

Mary frequently allowed her students the opportunity to share their cultural experiences with her and their classmates. Mary communicated to the students that they must always support their peers and respond to one another in a positive way despite their differences. As students communicated about their cultural backgrounds, Mary also spoke to students about her cultural background and traditions that existed among her family. Mary and her students were able to communicate without hesitation. By Mary and the students being able to communicate their cultural backgrounds in class, Mary created an atmosphere where students felt supported and encouraged to share. She embraced the cultural diversity and created a learning environment in which students felt respected. This example allowed Mary the opportunity to expose students to others' cultural background by verbal communication.

David also supported a learning environment where students were able to communicate in class. During one of the observations, David was teaching a lesson about students finding the vertex. Students were given a worksheet on how to find the vertex. The directions to the class were to complete the worksheet and then score themselves. David explained to the students how to self-evaluate. Students were to come to the front of the class to review the answers after completing their work and before self-evaluating. He gave the next set of directions, which was for students to exchange papers with their neighbors once they were done with their self-evaluations. Once students completed the exchanging of their work with their neighbors, David asked the students what they thought about the assignment. He posed various questions where students answered about the assignments. When a more difficult problem was discussed, all of the students did not agree on the same answer. David encouraged peer support and assistance to explain the reasoning for the answers chosen. Students began to help one another to justify the reasoning for the correct answer. The students helped each other with the reasoning of the problem by communicating the details of the problem. Students were invested in their learning as well as the learning of their classmates by working collaboratively. Students were encouraged to connect with their classmates to provide peer support and assistance. As the students communicated with each other as well as with David, he created a learning atmosphere in which the students felt respected and connected to one another.

Discourse/Instructional Conversation and Pedagogy/Instructional Practices

The pillars of discourse/instructional conversation and pedagogy/instructional practices both share the theme of collaboration. The discourse/instructional conversation pillar refers to practices where the teacher shares control of the classroom discourse with students. The discourse that the students and teachers produce is the collaboration. The teacher provides

structures that promote student collaborative talk. The teacher puts structures in place that promote student talk such as think, pair, and share groups, small group work, and partner work. This pillar also allows the teacher to institute collaborative learning to allow collaborative discourse. One culturally responsive indicator of the pedagogy/instructional practices pillar occurs when the teacher allows students to collaborate with other students. This involves the teacher creating an environment for collaborative groups such as think, pair, and share.

Collaboration

Collaboration refers to the teacher and students working together or coming to an understanding of a problem. Another aspect of collaboration occurs when students work together to solve a problem after sharing ideas. A culturally responsive classroom is a collaborative environment where students can work together with their classmates using instructional strategies such as think, pair, and share. This is a collaboration practice that is used by teachers to allow students to work with their peers and receive feedback. It also allows students to see another perspective of the task that they are working on. In a collaborative classroom setting, the teacher encourages dialogue between students as they work toward a common goal. The teacher also supports equitable participation from all students in the collaborative setting. The teacher encourages students to comment and expand upon the discussions in class. In this created collaborative learning environment, teachers and students work together, speak about various topics, and share with each other.

Steve encouraged collaboration among his students in his classroom. During Steve's fourth observation, he asked students what their anticipated occupation was and how much they would make on this job. As described earlier in this chapter, Steve used his students' anticipated occupations and future earnings to develop equations. Once he introduced the lesson, the

students were able to talk about their startup money and how much they were expected to earn per week. Steve encouraged students to work together as they were actively involved in thinking about their future career and earning money. The students listed their startup money, how much they would earn per hour, and how many hours they would work per week. Students were able to calculate their earned income. As students were calculating their future earned income, Steve encouraged the students to gather in groups of four to share with their classmates. After each student in the group shared with their group members, one student per group shared with the class how they had devised an equation and calculated their earnings. Students used the culturally responsive strategy of think, pair, and share. This was an example of how Steve allowed his students to collaborate with other students under the pillar of discourse/instructional practices.

One of the ways that David encouraged his students to collaborate was when they were given the opportunity to compare and analyze graphs as a collective. While analyzing the graphs, students were able to find commonalities which informed their understanding of the differences. During David's third observation, David asked the students to take out a sheet of graph paper and glue it inside of their notebook. Students were designing an interactive notebook. As David gave the directions, he asked students to get in their designated quad groups. Students were directed to draw a graph on their graph paper that represented y=x. Students were asked to explain to their group members the characteristics of what they drew. After the students gave their explanations of the characteristics of y=x, David asked them to write and graph y=x+1 (y=mx+b). After the students wrote and graphed this equation, they were asked to discuss the characteristics of this graph and compare it to the graph of y=x. Students were encouraged to collaborate among themselves about the differences of the two equations and graphs. David

asked students to speak to the class about what they discovered about both equations. After students spoke about what they had discovered, David asked the students to devise an equation where the "b" term was a negative number. The group members began to collaborate about how this graph would look if the "b" term was a negative number. Once all four students had spoken about the equations, the students were asked to get into pairs within their group. The two students were assigned to design and create the rest of the interactive notebook using the graph paper and various equations given by David. David encouraged students to ask questions to their group members as well as to him. With peer-to-peer collaboration, he allowed the students an opportunity to engage in instructional discourse which promoted extended talk and elaborated inquiry. One of the examples that David used in class was small group work and another was the think, pair, and share strategy.

During all of Mary's observations, it was evident that the classroom routine involved students working together as a collaborative unit. She provided structures that promoted student collaborative talk as she encouraged her students to use peer-to-peer support in class. During the beginning of her lessons, Mary asked direct questions for her students to answer about the lesson. At the end of her lesson, she followed up with an open-ended question. At this time, Mary asked students to get in their think, pair, and share groups. Once students positioned themselves to work together, they were able to solve the problem as a team.

During one of the observations, Mary was teaching her students about distance, rate, and time. As the students sat in quads, Mary asked them to start solving the problems for the unknown. Once she read the word problem in its entirety, she placed the word problem on the overhead projector for students to read on their own. Each group collaborated to read, write, and solve the word problem for the unknown. Mary asked the students in the group to discuss what

answers they had calculated and how they had calculated the answer. Students began to discuss as a group about their answers. Mary asked the students to develop a sentence describing the outcome and how the outcome made sense. She asked students to work within their group to come up with one sentence per group. The students were encouraged to comment on and expand upon the ideas of their peers. Mary encouraged all students in the group to work together. The structure that was in place promoted student talk and peer-to-peer support.

Conclusion

The overarching themes of all teacher participants were developed through the results from the observations based on the rubric of the CRIOP and all of the interviews. This chapter contains the data collected from the observations, key quotes from the interviews, qualitative data analysis of the shared culturally responsive themes, and the connection to the research questions with the data compiled. The results from the observations and interviews were able to provide a more "in depth" perspective of the pedagogy of the 8th grade mathematics teacher participants as it relates to the implementation of culturally responsive practices.

The key findings were demonstrated by all three participants. These themes are (a) use of personalized language, (b) humanistic approach to teaching, (c) communication, and (d) student-student collaboration. These themes are seen within the CRIOP tool which was used during the observations. With the four overarching themes, there are three pillars that these themes connect with. The pillar of *classroom caring and teacher disposition* is directly connected to the themes of use of personalized language, humanistic approach to teaching and communication. The pillars of *discourse/ instructional conversation*, and *pedagogy/instructional practices* is directly connected to the theme collaboration. As the teacher participants demonstrated ways to build relationships with their students, each one of these themes were shown during the observations.

The teacher participants' ability to possess a caring disposition assisted in the developing of a student-teacher relationship. The conversations which took place inside and outside of the classroom also was a medium for teachers developing relationships with their students. In chapter 5, it includes a summary of my findings, implications of practice and recommendations for future study.

CHAPTER 5 - DISCUSSION

This chapter is a comprehensive summary which includes interpretations of the observations, analyses from the interviews, answers the research questions and generates recommendations for future study. Chapter 5 reiterates the purpose of study, problem statement, methods and research questions. Chapter 5 contains discussion and future research possibilities to help answer the research questions:

> RQ1: To what extent do teachers use culturally responsive practices as measured by Culturally Responsive Instruction Observation Protocol (CRIOP) when working with racially diverse students in 8th grade mathematics classrooms?
>
> RQ2: How do teachers describe building relationships in the classroom with their students?

The data were analyzed, as described in Chapter 4, to respond to the research questions. I detailed for every teacher participant when culturally responsive indicators were used and how often the indicators were used during the observations. It was noted that out of seven pillars in the CRIOP, four were consistently used by all teacher participants. In addition, I took note of how teachers were building relationships with students during instruction.

Problem Statement

African American and Latinx students in 8th grade are below proficient in mathematics. As described in the 2018 summary report GDTF II, there is a vital need to examine the overall achievement of California 8th grade African American and Latinx students in urban middle schools, especially in the content area of mathematics. Research illustrates that culturally responsive teaching is a way to reach minority students and enhance outcomes (Gay, 2000).

Culturally responsive pedagogy is a teaching approach that merges students' cultures with the curriculum. However, unclear is the extent to which culturally responsive practices are used in 8th grade mathematics classes.

Purpose of Study

The purpose of this qualitative research study is to explore teaching practices, specifically the extent to which middle school mathematics teachers' practices are culturally responsive. Furthermore, in this study I examined how practices relate to cultivating student-teacher relationships. The data collected from observations and interviews illustrated the teachers' perceptions about the effectiveness of implementing culturally responsive practices. This study added value to existing educational research and informs parents, districts, campus leaders, and policy makers on how culturally responsive practices improved positive student-teacher relationships with racially diverse students in 8th grade mathematics classrooms.

Methods

For this qualitative study, the research was collected by observations and interviews to gain an in-depth understanding of the practices demonstrated by the teacher participants in the 8th grade mathematics classroom.

Research Question 1

Summary of Findings

RQ1: To what extent do teachers use culturally responsive practices as measured by Culturally Responsive Instruction Observation Protocol (CRIOP) when working with racially diverse students in 8th grade mathematics classrooms?

To respond to RQ1, I primarily drew on the observation data. The teachers that were observed in my qualitative study were neither familiar with the term, culturally responsive, nor aware of culturally responsive practices. However, many of the participants' practices demonstrated culturally responsive pillars and indicators measured by CRIOP. Three teachers used culturally responsive practices at various times within their lessons. However, based on the practices identified in CRIOP, all pillars were not consistently used.

David and Mary were *consistently* characterized by culturally responsive features. Both David and Mary showed indicators of caring for their students and their dispositions in a positive way. During every observation, these teachers demonstrated strong relationships with their students by calling on their students by name and by engaging in positive dialogue with their students. This process is called personalized language. With the use of personalized language, teachers are affirming the students by name. Culturally responsive pedagogy was explained by Gay (2000) as a multidimensional, student-centered approach that promotes equitable excellence and serves to validate and affirm the experiences and contributions of students from all cultures and backgrounds. A student's name is one of the representations of their family’s culture and can depict their family background.

Due to the many learning styles of students, David and Mary described adjusting their lessons to meet the needs of all students during the observations. David allowed students to use multiple ways to demonstrate their knowledge by graphing equations manually or by using a graphing program on chrome books. Encouraging students to construct multiple solutions for a problem is considered a high-quality element of teaching (e.g., National Council of Teachers of Mathematics, 2000). Mary also encouraged her students to use multiple ways to express their rationale for the answers. Students demonstrated their knowledge when solving quadratic

equations by using various methods to construct a solution. Students explained their answers through written explanations or through drawings with detailed labels. The effect of constructing multiple solutions for real-world problems on students' knowledge is an important issue in mathematics education on the basis of theoretical propositions that constructing multiple solutions should have positive effects on student achievement (Levav-Waynberg & Leikin, 2012; Neubrand, 2006; RittleJohnson & Star, 2009; Silver et al., 2005). In addition, Common Core State Standards supports students' procedural knowledge and conceptual understandings are developed and demonstrated through application and modeling. It is encouraged for students to move beyond simple, algorithm strategies to solve mathematics problems.

Mary and David communicated their academic expectations for their students. Their classrooms were student-centered, where the students were able to use their voice in class. They encouraged their students to work together through the various lessons. Wink (2011) expressed the importance of knowing that dialogue is considered two-way, which allows for change within a person and the contexts in which we learn from others. Communication and collaboration were used in both classes as a means to share information and to solve problems during the lessons. Communication is a critical pathway to participation and engagement (Emdin, 2010). Teachers and students in both classes collaborated and were able to communicate their ideas.

Steve's scores based on the CRIOP rubric were not as consistent. On two of four of Steve's observations, his scores classified his classroom as being *often* characterized by culturally responsive features. Based on the CRIOP, the two pillars where Steve scored a four for most of the indicators were classroom caring and teacher dispositions and classroom climate/physical environment. An example of classroom caring and teacher dispositions was when Steve addressed his students by name and used personalized language with students

instead of pointing at students to get their attention or saying *hey hey*. Personalized language afforded Steve the opportunity to adapt his approach to students individually.

Interpretation

Out of seven pillars, there are four pillars that were not consistently seen during the observations: (a) assessment practices, (c) classroom climate/ physical environment, (d) curriculum/ planned experiences, and (g) sociopolitical consciousness/ multiple perspectives. Culturally responsive indicators that are listed under the pillar *assessment practices* could have been observed daily. The culturally responsive indicators that were given in the CRIOP for this pillar were:

- The teacher gives clear and direct feedback.
- The teacher includes multiple ways to represent knowledge and skills.
- The teacher encourages student self-assessment.
- The teacher uses multifaceted classroom-based assessments, tied to particular projects.
- The teacher uses assessment data that captures individual student learning/ thinking.

An important caveat is that each teacher was observed four times. While I was able to get a sense of their CRP, it is possible that they engaged in these assessment practices, but I was not present on a day when the teacher demonstrated these practices.

The pillar of assessment practices was not consistent throughout the observations. When discussing assessments, teachers use several types of assessments to enhance student learning. One of the types of assessments is formative. Formative assessment involves the collection of evidence about student learning through a variety of formal and informal assessment methods that are integral to classroom practice (Black & William, 2009; Popham, 2008). Formative assessments are typically given to assess student learning and supposed to give students feedback

about their learning. Teachers giving clear and direct feedback is one of the indicators listed for the pillar of *assessment practices*. Feedback is an integral part of the student learning process. Despite the evidence-based potential of feedback in formative assessment, recent research suggests that teacher feedback often does not result in improved student learning in everyday classroom practice (Ajjawi & Boud, 2016; Hattie & Gan, 2011). The reason for this is because feedback is most effective when it is cyclical between the teacher and student and provides a dialogue (Boud & Molloy 2013; Carless et al., 2011). In many classrooms, feedback is only given to the student after formal and informal classroom assessments. Summative assessment is usually done at the end of a unit, a chapter or a learning experience and takes the form of tests that include questions based on the syllabus studied during that time. It is almost always a formal process and the results are expressed symbolically, as marks or letter grades identifying the gaps in student learning (Isaacs et al., 2013).

One of the reasons why the indicators for *assessment practices* pillar may have not been seen could be the lack of teacher training. Despite the importance of assessments in education today, few teachers receive much formal training in assessment design or analysis (Guskey & Yoon, 2003). With the lack of training, many teachers resort back to the way they were taught. Teachers typically use the assessment practices that they are more familiar with. When asked about assessment training they received and if such training benefited their classroom practices, teachers generally indicate that assessment training they receive did not adequately prepare them for their classroom assessment practices (Goslin, 1967; Hills, 1991; O'Sullivan & Chalnick, 1991; Roeder, 1972). Stiggins (2001) argued that teachers tend to adopt assessment methods that they experienced as students, this is as if someone out there has declared it natural for teachers to stay within the old assessment (assessments that the teachers already knew from past

experiences) comfort zone rather than learn to adopt and use relevant and quality of assessment methods even before they use them in their classrooms. In addition, Earl (2013) and William (2006) stated it is challenging and complex for teachers to rethink and change habits and practices that they are used to employing. For teachers who use old assessment practices, it could be difficult to demonstrate the indicators for the *assessment practices* pillar from the CRIOP.

During my observations, student work was posted on the wall in some classes. However, it is unclear if a dialogue took place between the teacher and students about the outcome of their assignments that were posted on the wall. As the observations took place, teachers never gave feedback to students about the work on the wall. Nevertheless, student work being posted on the wall is a type of formative assessment but there was no evidence of direct and clear feedback. This type of formative assessment could help students with their learning if the teacher provided feedback. Due to my observations being limited to only four, the teachers could have given the students feedback, but it did not happen during the observations for this study.

Another pillar that was not demonstrated was *classroom climate/ physical environment*. The culturally responsive indicators that were given in the CRIOP for this pillar were:

- The physical materials and furnishings invite students to use mathematics.
- The physical materials and furnishings promote shared ownership of the environment.
- The physical materials establish an environment that demonstrates an appreciation for diversity.
- The furnishings allow students to be seated with a partner or group and collaborate or assist each other.

The classrooms could have been decorated with literature, artwork and posters to establish an environment that represents diversity. The supplemental learning materials could

have been placed in an area consistently where all students were able to have the same opportunity to use them if they chose to. In order to promote shared ownership, a listing of the responsibilities of every student in the class could have been placed in an area of the class. This would have demonstrated the teacher promoting an environment for shared ownership of the classroom. The seating of the students was also an indicator that could have been demonstrated consistently. If participants placed students' desks in collaborative settings, it could have facilitated students working as partners or groups. There were no constraints on teacher's ability to alter the furnishings in the classroom. Contreras and colleagues examined seating arrangements and found a difference towards the student's level of participation based on seating. The authors argued that seating the students in groups was important because students were able to get closer, they could see each other and establish a connection that let them interact and get engaged in class activities. This seating arrangement fostered students' participation, confidence, interaction, and mutual learning and helped them focus on the activities (Contreras & Chapetón Castro, 2017). There were two pillars that I believed were not as accessible to capture during my observations. The pillars were *curriculum/ planned experiences* and *sociopolitical consciousness/ multiple perspectives*. The indicators for both pillars are attainable but they are not easily recognized by an observer. Here are the indicators for *curriculum/ planned experiences*:

- The curriculum and planned learning experiences use the knowledge and experience of students.
- The curriculum and planned learning experiences involve students in (subject area) for real purposes for real audiences.

- The curriculum and planned learning experiences integrate and provide opportunities for the expression of diverse perspectives.
- The curriculum and planned learning experiences integrate skills and information.
- The curriculum and planned learning experiences includes issues important to the classroom, school, and larger community.

One of the indicators for *curriculum/ planned experiences* was the teacher using the knowledge and experience of students. Silseth (2017) published an example of curriculum/planned experiences in a case study which involved students with Haitian Creole as a first language. Students were encouraged to use their everyday language and experiences in discussion groups within the classroom setting. The teacher offered an environment where inquiry could take place from various perspectives on the subject matter. This study emphasized the teacher's role in realizing learning in such environments and showed that everyday knowledge can be used as ''resources that support deep intellectual engagement'' (p. 537), which can be mobilized for the purpose of creating a learning environment in which students can reason, reflect, and richly discuss science matters (Warren et al., 2001). This is an attainable action that teachers could demonstrate. Another example of the curriculum and planned learning experiences using the knowledge and experience of students is detailed in this case study. Hung et al. (2012) examined the way in which teachers can function as brokers, facilitating learning situations in which students are enabled to use strategies gained from participating in social practices outside school in order to participate competently in educational activities. This case study was conducted where one student was observed for over a two-year period in school and outside of school. The findings revealed that teachers can support students by mobilizing successful methods for participating in practices outside of school when they face academic

challenges in school (Silseth, 2017). This particular case study was conducted over a 2-year period.

For the pillar, *sociopolitical consciousness/ multiple perspectives*, the indicators and examples could have been accomplished. However, across my observations, there were no discussions about taking action in regard to actively deconstructing negative stereotypes in instructional material, or the opportunity for the teacher to instruct students to use different discourse patterns to fit the social context. The indicators for *sociopolitical consciousness/ multiple perspectives*:

- The teacher encourages students to think about and question the way things are.
- The teacher encourages students to investigate and take action on real world problems.
- The teacher actively deconstructs negative stereotypes in instructional materials and other texts.
- The teacher instructs students to use different discourse patterns to fix the social context.

During the observations, there were no examples of these indicators demonstrated. One of the examples for this pillar that could have been easily demonstrated was the teachers having an open discussion about biases and teachers challenging students to deconstruct their own cultural assumptions were not demonstrated during the observations. Many white teachers are uncomfortable acknowledging or discussing race and racism (Pollock, 2004) and are unaware of their own biases and stereotypes (Warikoo et al., 2016). This is especially troublesome under the present sociopolitical conditions: when incidents of racial harassment spiked in the wake of the 2016 presidential election, K–12 schools were the most common location for episodes to occur (Southern Poverty Law Center, 2016, 2017). Educators' racial attitudes also have implications for conversations about race in the classroom. Conversations about race must involve

interrogating, and reflecting on, common racial stereotypes (Carter et al, 2017; Quinn & Stewart, 2019). Fear of appearing prejudiced or of disclosing racially biased beliefs can affect a white educator's ability to engage in dialogues around race in the classroom, with detrimental effects for students of color (Sue, Lin et al., 2009; Sue, Torino et al., 2009).

Research Question 2

Summary of Findings

RQ2: How do these teachers describe building relationships in the classroom with their students?

Culturally responsive practices allow teachers to utilize specific strategies and skills to intentionally shape positive student-teacher relationships. The CRIOP pillar of *classroom caring and teacher dispositions* detailed the teacher demonstrating an ethic of care. One of the examples that are indicated is the teachers differentiating management techniques with students of various backgrounds. This means teachers know their students and make adjustments to their teaching styles based on their student needs. This is a culturally responsive practice needed to develop positive relationships in the classroom. Another example is the teacher *consistently* modeling respectful interactions with all students in the classroom. Students want to be treated as if they are respected and connected to the learning environment. Creating an atmosphere where students are allowed a voice in their instruction and providing students with multiple ways for demonstrating competence allows students to develop a positive relationship with their teachers.

Each teacher participant described how they built relationships in various ways. Using a humanistic approach, personalized language, communication, and collaboration are the areas that were used by all teachers to build relationships in the classroom. Mary described building

relationships with her students by showing her love for math and caring dispositions for the students. Mary believed her 33-year connection to the community was the connector to building relationships with her students. During the interview, I explained to David what culturally responsive practices were and how the research stated it assisted all students in their educational pathways. David agreed that the practices that he was demonstrating by allowing students to share their cultural background can bring all students together. David stated, “I think anything you're doing where you're giving them (students) a chance to use part of themselves is kind of the idea.” David was speaking about giving students the opportunity to be a part of the learning environment with using their home culture is allowing the students to make a connection with the teacher to build a stronger relationship. Steve believed the more students talk with their teacher allows the students and teacher to learn about each other. With this open communication, Steve discussed how he realized what the students were dealing with from day-to-day whether home life or school issues.

Interpretation

The common themes that were observed the most from all teachers were (a) use of personalized language, (b) humanistic approach to teaching, (c) communication, and (d) collaboration. The themes observed are culturally responsive instructional indicators which are evidence of the CRIOP pillars. However, these themes are also integral in the relationship building process, as instruction is a mechanism to build relationships. Teachers can build relationships with their students by demonstrating use of personalized language, humanistic approach to teaching, communication, and collaboration. Building relationships through instruction was partially achieved with students being enabled to collaborate with the teacher as well as their classmates.

Three of the four overarching themes are connected to the pillar of *classroom caring and teacher disposition*. These themes are personalized language, humanistic approach, and communication. The indicators that are specific actions of the teacher are teachers demonstrating an ethic of care, communicating high expectations, creating a learning atmosphere in which students feel respected and connected to one another, and being able to actively confront instances of discrimination. The teacher's actions are demonstrated in the classroom to build rapport with students. As discussed in Chapter 2, culturally relevant and culturally responsive pedagogy, both terms merge culture and pedagogy with the same goals of developing positive student-teacher relationships and increasing student achievement. According to Milner (2010), when culturally relevant pedagogy is implemented in a classroom, teachers can work towards building a rapport with students, which eventually deepens the teacher to student relationship. Many teachers are aware of the need for developing positive relationships with their students in order for the students to academically perform well. Porgess (2011) emphasized that relationships are important during the learning process.

Personalized Language

As described in the CRIOP tool, personalized language is the teacher calling the students by their name. Knowing and using a students' name during and outside of class recognizes that a student exists and is important (Glenz, 2014). Not only is it important that a teacher calls a student by name but also it is important for teachers to use the correct pronunciation. If a teacher does not know the correct pronunciation of the students' name, it is highly encouraged for the teacher to ask the student to assist the student with the correct pronunciation. Kohil and Solorzano (2012) reported in a qualitative study that the tone set by a teacher using a student's name incorrectly was significantly remembered by participants long after they were in school.

Growing up with a name that was not typical but devised by my parents, my teachers and friends always mispronounced my name. For many students of color, a mispronunciation of their name is one of the many ways in which their cultural heritage is devalued. Usually, names can connect children to their ancestors, country of origin or ethnic group, and often have deep meaning or symbolism for parents and families. When a child goes to school and their name is mispronounced or changed, it can negate the thought, care, and significance of the name, and thus the identity of the child. This happens for white and nonwhite children alike (Kohli & Solorzano, 2012).

There is strong evidence that relationships with adults in schools are among the most important predictors of positive youth development, which includes both academic (e.g., achievement) and non-academic (e.g., social-emotional) outcomes (Hamre & Pianta, 2001). Developing positive teacher student relationships, students attributed this to feelings of closeness, respect, trust, and a sense of well-being (Yu et al., 2018). Positive teacher student relationships are perhaps better characterized as a series of "small wins" that emerge sporadically over time (Rhodes et al., 2006, p. 697). The small wins are teachers interacting with students in the simplest way by calling on students in class and giving them nicknames. These gestures of teachers using personalized language with their students can make a difference when developing positive student relationships in the classroom.

Humanistic Approach

A teacher who demonstrated a humanistic approach will tap into a student's culture and allow students to develop social capital. According to Bourdieu (1986, p. 248) social capital is defined as 'the aggregate of the actual potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or

recognition.' In other words, relationships give people access to resources. Moreover, students with more social capital typically have easier access to acquiring better jobs, internships, and other opportunities that can create a richer educational experience (Granvotter, 1973; Todman, 2018). As students develop a rapport with teachers, they are developing a social capital for their future. By demonstrating a humanistic approach, a teacher is attentive to the needs of students. These teachers are exhibiting a humanistic approach that can allow student students to build on the developed social capital (Salloum, Goddard & Larsen, 2017).

Communication

Communication is the dialogue between the students and teacher as well as the students among each other. The dialogue can be verbal, non-verbal, and written. Communication also involves the teacher communicating the expectations for the students and their learning. As stated in Chapter 2, culturally responsive teaching practices include communicating high teaching expectations and learning expectations along with accepting all student cultural groups. The practices that these teachers facilitate allow students and teacher to accept the cultural heritage of all ethnic groups, to build bridges between home and school life experiences, to differentiate learning to meet the needs of all learners, to know and accept personal cultural background, and to incorporate all multicultural information being taught in school (Gay, 2000). When teachers are communicating with their students, they should be comfortable with meaningful classroom dialogue that supports students learning. Wink (2011) expressed the importance of knowing that dialogue is considered two-way, which allows for change within a person and the context in which we learn from others.

Collaboration

The pillars *discourse/ instructional conversation* and *pedagogy/ instructional practices* have common indicators which are parallel to the emerging theme of collaboration. In a collaborative setting, students are allowed the opportunity to use their funds of knowledge to contribute to the lesson and/ or curriculum. Funds of knowledge is defined as the historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being. It is also noted that funds of knowledge represent a realistic view of households as containing ample cultural and cognitive resources with great potential utility for classroom instruction (Moll et al., 1991). As students use their funds of knowledge to contribute to the lesson, they are engaging in the learning process. Collaboration is also working together to accomplish a task. With the incorporation of their funds of knowledge, students can collaborate with others about their cultural and home linguistic abilities while being supported by the teacher. According to Howard (2012), culturally responsive pedagogy is an approach that incorporates attributes, characteristics, or knowledge from a student's cultural background into instructional strategies and course content to improve educational outcomes.

Implications for Practice and Policy

As classrooms in U.S. public schools become increasingly culturally, racially, and ethnically diverse landscapes for teaching and learning, the potential of culturally responsive practices to support equity and excellence in student outcomes is increasingly important (Bottiani et al., 2018). As discussed in Chapter 1, there is a wide disparity between minority student achievement compared to white students. Hammond (2015) describes dependent learners as students who are not able to do complex, school-oriented learning tasks such as synthesizing and analyzing informational text without continuous support. Many culturally and linguistically

diverse students are considered dependent learners. Hammond argues that these students mostly rely on the teacher to carry the cognitive load and are seemingly unsure of how to tackle new tasks. As stated in Chapter 1, many of the Black and Latinx students fall in the dependent learner category. As educators collaborate on ideas and strategies to mitigate the achievement gap, the practices of culturally responsive instruction were introduced. According to Hammond (2020), the practices of culturally responsive instruction should focus on improving the learning capacity of the students who have been educationally marginalized, center around the affective and cognitive aspects of teaching and learning, and build cognitive capacity and academic mindset by pushing back on dominant narratives about people of color. With the core of culturally responsive education, school leaders will have to shift their mindset.

With the use of my research and the research of the culturally responsive practices being implemented in classrooms for all students, school leaders can also offer ongoing professional development to staff, faculty and parents. Professional development that is sustained, offering multiple opportunities for teachers to engage in learning around a single set of concepts or practices, has a greater chance of transforming teaching practices and student learning (Darling-Hammond et al., 2017).

As stated in Chapter 1, by 2024, public education is moving to a minority-majority. Given this demographic shift, educational programs must have culturally responsive pedagogy as a course or embedded within courses as a part of the graduation requirements in colleges and universities. As educator preparation programs prepare preservice teacher candidates to become certified and graduate programs prepare certified educators to connect with students in school settings, these educators should be prepared to understand that racial and cultural identities are humanistic factors that should be considered, taught, and demonstrated in their educational

environments (Hutchison & McAlister-Shields, 2020). Ladson-Billings (1995) suggested that higher education environments should provide curricula that are culturally relevant to empower their students. The instruction provided by higher education faculty should include instructional and conceptual theories, educational resources, and strategies that close the cultural gap between instructors and their learners. The application of culturally responsive teaching should be viewed as needed and useful in the instruction of all students. Presenting evidence for both preservice teacher candidates and for graduate-level students shows that diverse classroom settings can provide a pathway for positive teaching and learning (Hutchison & McAlister-Shields, 2020). Developing and structuring educational programs that include culturally responsive teaching will contribute to the preparation of preservice teacher candidates and to graduate-level students in learning to demonstrate concepts that will help their students become critical analyzers, capable of using written and oral literacy structures, scientifically engaged, and proficient in navigating all the aspects of their academic arena (Hutchison et al., 2018). Teachers should emphasize academic excellence so that their students can increase their overall academic achievement levels (Delpit, 1995). Students earning a degree in education should be trained on the significance and importance of the practices of culturally responsive pedagogy. The importance of teacher education programs working toward interrupting deficit and compensatory understandings of students (Phillips, 2012) and equipping initial teacher educators with critical self-reflexive tools and strategies (Gay & Kirkland, 2003; Milner, 2003) with the aim of preparing them to care for students has been widely acknowledged.

Implications for Theory

As numerous researchers studied educational practices and Critical Race Theory (CRT), one would be remiss to speak about culturally responsive pedagogy without discussing how CRT

is connected. Culturally relevant teaching is grounded in CRT (Gay, 2002). As stated in Chapter 2, Ladson Billings stated that CRT gave African American and Latinx communities a sense of hope as students face academic achievement complexities in the public education system since the Civil Rights era. The tenets of CRT that have evolved include (a) the permanence of racism, (b) whiteness as property, (c) interest convergence, (d) counter - storytelling, (e) race as a social construct, and (f) the critique of liberalism (Chapman et al., 2007; DeCuir & Dixson, 2004; Delgado & Stefancic, 2012; Sleeter, 2017; Taylor, 1998; Wallace & Brand, 2012). From my study, I was able to observe and interview teachers who taught racially diverse students. During the observations, I did not notice any distinguishing strategies being used where the teachers were intentional about mitigating the opportunity gap with these groups of students. Whether it was conscious or unconscious, the actions of the teachers did not reflect that there was an opportunity gap amongst the students. After interviewing the teachers and asking them about culturally responsive practices, they were aware of the term but not sure of the practices. Also, they were not aware of how these practices can play an integral part in shaping the academic achievement of racially diverse students who typically are not achieving at the same percentage as their White peers, marginalized students of color. As I reflected culturally responsive practices, the observations for my study and the interviews for my study, there are connections with some of the tenets of CRT. My study was able to validate specific tenets of CRT. These tenets that are parallel to my study are interest convergence and storytelling.

During the interviews, two of the teacher participants stated that they received training in culturally responsive practices in their educational programs in college. However, when asked about the details of culturally responsive practices, their answers were vague. Based on the definition of interest convergence, which is defined in Chapter 2, racial equality, and equity for

people of color will be pursued and advanced when they converge with the interests, needs, expectations, and ideologies of Whites. The varied systems of knowing in decision making (including in the classroom) are sometimes so grounded and ingrained that it may be difficult for there to be negotiation and convergence between and among different racial and ethnic groups of people (Milner & Milner, 2008). Finney and Orr (1995) found that many pre-service teachers learned something positive from a multicultural education course, yet they still failed to recognize systemic and institutional racism that privileges some and oppresses others. Likewise, Lawrence and Bunche (1996) found that as a result of taking one course, White students' knowledge about racism and racial identity was initiated indicating that either more learning was needed, or different contexts should be communicated to transform them to be effective teachers of students from diverse backgrounds. While introducing pre-service teachers to concepts in multicultural education may be positive, teachers with only this limited background still lack knowledge about factors influencing schools as an enterprise within society: school reformation, educational equality, and institutional change (Sleeter, 2001). As for my dissertation, I believe even with the teacher participants understanding of the simplest information about culturally responsive practices and the effects on students, the practices that may have been introduced to these participants during their educational programs were not as equipped with the knowledge base to implement with fidelity. This may have been due to not knowing how implementing these practices will affect the dominant group or it could have been the teacher participants familiarity with implementing practices that ultimately are designed to assist the marginalized students.

The tenet of counter-storytelling is viewed as a framework that validates racial experiences of people who have been marginalized (DeCuir & Dixson, 2004; Ladson-Billings,

2005). A culturally responsive practice of the teacher allowing the students to share their family stories in their home language/ dialect is an example from the CRIOP pillar of discourse/ instructional conversation. Validating and affirming students cultural background is an instructional practice that is used in a responsive classroom. During the observations in my study, there were opportunities where all the teachers could have allowed students to share their families' stories. However, one of the teacher participants shared during the interview that she allowed students to share their cultural background during any opportunity where it was permissible. She also spoke about allowing students the space to share about their family's traditions and holidays. One of the stories that was shared was the tradition of Ramadan. This student spoke about fasting and praying during a specific time of the year. Delgado (1989) outlined several ways that counter-storytelling benefits groups that have traditionally been marginalized and oppressed in the United States. Delgado also explained that when marginalized groups of people are telling their stories, they can construct additional counter-stories to challenge the dominant story. As a culturally responsive practice, students are encouraged to share their cultural backgrounds, traditions, and holidays. Not only does this open communication between the teacher and student which is a level of engagement but also allows for the building of relationships.

Recommendations for Future Research

There is a plethora of research that has been completed on culturally responsive pedagogy. However, replicating this study in a school that provides ongoing professional development in the areas of culturally responsive practices would be illuminating. Additional research in observing the effects of students' academic achievement after being taught by teachers who have participated in ongoing professional development will also add to this

research. In addition to the previous recommendation, observing the effects of culturally responsive practices implemented to specific students of color such as African Americans and Latinx students over a period of time. Due to the limitations of my study with a reduced amount of time for observations, an ethnographic approach with an extensive timeframe would add to the research of culturally responsive pedagogy.

Conclusion

The purpose of this qualitative research study was to explore pedagogy, specifically the extent to which practices are culturally responsive. In this study, I discovered the teacher participants used some culturally responsive practices without knowledge of the practices being culturally responsive. However, there is a need for explicit and ongoing professional development for teachers in understanding and engaging culturally relevant practices. Research shows the effectiveness of implementing culturally responsive practices in schools. Students' academic achievement and engagement increases when they are taught in a culturally relevant manner (Gay, 2002; Ladson-Billings, 1994). Nevertheless, the follow through of ensuring students are receiving a culturally responsive education is lacking in public schools.

My hopes of this dissertation are to allow education leaders to understand the importance of implementing culturally responsive practices to serve the needs of African American and Latinx students. With ethnically and linguistically diverse students sharing their lived experiences, this affords their presence to be accepted and affirmed in schools. This also allows for the narrative of their ethnic histories and the exploration of their learning styles to contribute to the educational system. Teachers can take this knowledge and cultivate a safe environment of acceptance and empathy that is grounded in caring. Interpersonal relationships that can be

developed by a culturally responsive teacher and a student should have a positive impact on the student.

References

Ajjawi, R., & Boud, D. (2016). Researching feedback dialogue: An interactional analysis approach. *Assessment & Evaluation in Higher Education, 42*, 252-265.

Albert Shanker Institute (2015). *The state of teacher diversity in American education*. Washington, D.C: Author. Retrieved from www.shankerinstitute.org/resource/teacherdiversity

Ali, S., & Murphy, R. (2013). Merging and creating culturally relevant pedagogy in public schools. *Journal of Research Initiatives, 6*(1), 39-45.

Arriola, E. (1998) Difference, solidarity, and law: Building Latina/o communities through LatCrit theory. *Chicano-Latino Law Review, 19*, 1-612.

Bailey, M., & Dynarski, S. (2011). *Gains and gaps: Changing inequality in U.S. college entry and completion*. Retrieved from https://www.nber.org/papers/w17633.pdf

Bell, D. A. (1980). Brown v. Board of Education and the interest-convergence dilemma. *Harvard Law Review, 93*, 518-533.

Berryman, M., SooHoo, S., & Nevin, A. (2013). *Culturally responsive methodologies*. Bingley, UK: Emerald.

Black, P., Wiliam, D (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability, 21*(1), 5-31.

Blanchett, W. (2006). Disproportionate representation of African American students in special education: Acknowledging the role of White privilege and racism. *Educational Researcher, 35*(6), 24-28.

Boser, U. (2011, Nov. 9). *Teacher diversity matters: A state-by-state analysis of teachers of color*. Center for American Progress. Retrieved from http://www.americanprogress.org/issues/education/report/2011/11/09/10657/teacher-diversity-matters/

Boud, D., & Molloy, E. (2013). Rethinking models of feedback for learning: The challenge of design, assessment and evaluation in higher education. *Assessment and Evaluation in Higher Education, 38*, 698-712.

Boutte. G. S., & Hill, E. L. (2006). African American communities: Implications for culturally relevant teaching. *New Educator, 2*, 311-329.

Bourdieu, P. (1986). 'The forms of capital.' In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). New York: Greenwood Press.

Boykin, A. W., & Noguera, P. (2011*). Creating the opportunity to learn: Moving from research to practice to close the achievement gap*. Alexandria, VA: ASCD.

Boyle-Baise, M. (2005). Preparing community-oriented teachers: Reflections from a multicultural service-learning project. *Journal of Teacher Education, 56*, 446-458.

Brown, K. D. (2018). Race as a durable and shifting idea: How black millennial preservice teachers understand race, racism, and teaching. *Peabody Journal of Education, 93*(1), 106-120.

Byrd, C. M. (2016). Does culturally relevant teaching work? An examination from student perspectives. *SAGE Open, 6*(3), 1-10.

Cabrera, N. (2018). Where is the racial theory in critical race theory? A constructive criticism of the crits. *The Review of Higher Education*, *42*, 209-233.

Caldwell. P. (1995) A hairpiece: Perspectives on the intersection of race and gender. In R. Delgado (Ed.), *Critical race theory: The cutting edge* (pp. 267–277). Philadelphia, PA: Temple University Press.

California School Dashboard. Retrieved from https://www.caschooldashboard.org/

Carless, D., Salter, D., Yang, M., & Lam, J. (2011). Developing sustainable feedback practices. *Studies in Higher Education*, *36*, 395-407.

Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it.* Palo Alto, CA: Learning Policy Institute.

Carver-Thomas, D. (2018).
Diversifying the teaching profession: How to recruit and retain teachers of color. Palo Alto, CA: Learning Policy Institute.

Carter, P. L., Skiba, R., Arredondo, M. I., & Pollock, M. (2017). You can't fix what you don't look at: Acknowledging race in addressing racial discipline disparities. *Urban Education, 52*, 207–235.

Chapman, T. K. (2007). Interrogating classroom relationships and events: Using portraiture and critical race theory in education research. *Educational Researcher*, *36*(3), 156–162.

Cooc, N., & Yang, M. (2016). Diversity and equity in the distribution of teachers with special education credentials: Trends from California. *AERA Open, 2*(4). Retrieved from https://doi.org/10.1177/2332858416679374

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research*. Thousand Oaks, CA: Sage.

Cowan, J., Goldhaber, D., Hayes, K., & Theobald, R. (2015). *Missing elements in the discussion of teacher shortages*. Washington, DC: American Institutes for Research. CALDER Explainers. Retrieved from http://www.caldercenter.org/missing-elements-discussion-teacher-shortages

Darling-Hammond, L. (2010). *The flat world and education: How America's commitment to equity will determine our future*. New York: Teachers College Press.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. Retrieved from https://learningpolicyinstitute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf

Dei, G. J. S. (2012). *Teaching Africa: Towards a transgressive pedagogy*. Dordrecht: Springer.

Decuir, J., & Dixson, A. (2004). "So when it comes out, they aren't that surprised that it is there": Using critical race theory as a tool of analysis of race and racism in education. *Educational Researcher, 33,* 26-31.

Delgado, R. (1989). Storytelling for oppositionists and others: A plea for narrative. *Michigan Law Review Association, 87,* 2411–2441.

Delgado, R. (Ed.). (1995a). *Critical race theory: The cutting edge*. Philadelphia: Temple University Press.

Delgado, R., & Stefancic, J. (1992). Images of the outsider in American law and culture: Can free expression remedy systemic social ills? *Cornell Law Review*, 77(6), pages 1258 - 1297. Retrieved from https://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=3571&context=clr

Delgado, R., & Stefancic, J. (Eds.). (2000). *Introduction. Critical race theory: The cutting edge* 2nd edition. Philadelphia, PA: Temple University Press.

Delgado, R., & Stefancic, J. (2012). *Critical race theory: An introduction*. New York University Press. Press.

Delpit, L. (1995). *Other people's children: Cultural conflict in the classroom*. New York, NY: New Press.

Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Thousand Oaks, CA: SAGE.

Deshano da Silva, C., Huguley, J. P., Kakli, Z., Rao, R. (Eds.) (2007). *The opportunity gap: Achievement and inequality in education*. Cambridge, MA: Harvard Education Publishing Group.

Donnor, J. (2005). Towards an interest-convergence in the education of African American football student athletes in major college sports. *Race, Ethnicity and Education, 8,* 45-67.

Donnor, J. K., Rousseau Anderson, C., & Dixson, A. D. (2018). The more things change the more they stay the same: Race, education, and critical race theory after 20 years: An appraisal. *Peabody Journal of Education, 93*(1), 1-4.

Earl, L. (2003, 2013). Assessment as learning: Using classroom assessment to maximize student learning. Thousand Oaks, CA: Corwin Press.

El-Mekki, S. (2018, September 27). *Black teachers are not enough*. The Philadelphia Citizen. Retrieved from https://thephiladelphiacitizen.org/black-teachers-are-not-enough/

Emdin, C. (2010). Dimensions of communication in urban science education: Interactions and transactions. *Science Education, 95*, 1–20.

Eroglu, S. E., Bozgeyikli, H., & Calisir, V. (2009). Life satisfaction depending on socioeconomic status and gender among Turkish students. *Policy Futures in Education, 7*, 379-386. https://doi.org/10.2304/pfie.2009.7.4.379

Espedido, R., & Toit, W. D. (2017). Mathematics teachers "telling it like it is." *Australian Mathematics Teacher, 73*(1), 24-25.

Fay, L. (2018, August 4). *What's the racial breakdown of America's public school teachers?* The 74. Retrieved from https://www.the74million.org/article/whats-the-racial-breakdown-of-americas-public-school-teachers/

Finney, S., & Orr, J. (1995). "I've really learned a lot, but…": Cross-cultural understanding and teacher education in a racist society. *Journal of Teacher Education, 46*, 327–333.

Flewelling, G., & Higginson, W. (2005). *Teaching with rich learning tasks: A handbook* (2nd ed.). Adelaide: Australian Association of Mathematics Teachers.

Galindo, C., & Sonnenschein, S. (2015). Decreasing the SES math achievement gap: Initial math proficiency and home learning environments. *Contemporary Educational Psychology, 43*, 25–38. Retrieved from https://doi.org/10.1016/j.cedpsych.2015.08.003

Gasman, M., Samayoa, A. C., & Ginsberg, A. (2017). Minority-serving institutions: Incubators for teachers of color. *The Teacher Educator, 52*(2): 84–98.

Gay, G. (2000). *Culturally responsive teaching: Theory, research and practice* (1st edition). New York: Teachers College Press.

Gay, G. (2002). Culturally responsive teaching in special education for ethnically diverse students: Setting the stage. *Qualitative Studies in Education, 15*, 613–629.

Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice* (2nd edition). New York, NY: Teachers College Press.

Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice* (3rd edition). New York, NY: Teachers College Press. 2nd edition.

Gay, G., & Kirkland, K. (2003). Developing cultural critical consciousness and self-reflection in preservice teacher education. *Theory into Practice, 42*, 181-187.

Gillborn, D. (2006). Critical race theory and education: Racism and anti-racism in educational theory and praxis. *Discourse: Studies in the Cultural Politics of Education, 27*(1), 11-32. doi:10.1080/01596300500510229

Glenz, T. (2014). The importance of learning students' names. *Journal on Best Teaching Practices, 1*(1), 21-22.

Goslin, D. A. (1967). *Teachers and testing*. New York: Russell Sage Foundation.

Goetchius, S. (2018). *A case for culturally responsive pedagogy in classrooms*. Education Elements. Retrieved from https://www.edelements.com/blog/a-case-for-culturally-responsive-pedagogy-in-classrooms

Goudeau, S., Autin, F., & Croizet, J. C. (2017). Studying social class in psychology: Economic, symbolic and cultural approaches. *International Review of Social Psychology, 30*, 1–19.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology, 78*, 1360-1380.

Guskey, T. R., & Yoon, K. S. (2009). What works in professional development*? Phi Delta Kappan, 90*(7), 495-500. Retrieved from https://tguskey.com/wp-content/uploads/Professional-Learning-5-What-Works-in-Professional-Development.pdf

Hajducky, J. (2018, July 6). *Fostering a growth mindset through culturally responsive teaching*. Psychology Benefits. Retrieved from https://psychologybenefits.org/2018/07/06/cross-post-fostering-a-growth-mindset-through-culturally-responsive-teaching/

Hammond, Z. (2015). *Culturally responsive teaching and the brain: Promoting authentic engagement and rigor among culturally and linguistically diverse students*. Thousand Oaks, CA: Corwin.

Hammond, Z. (2018, February 7). *Culturally responsive teaching: It begins with responsiveness* [Blog post]. Retrieved from https://www.teachingchannel.com/blog/culturally-responsive-teaching

Hamre, B., & Pianta, R. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*, 625- 638.

Hattie, J. A., & Gan, M. (2011). Instruction based on feedback. In R. Mayer & P. Alexander (Eds.), *Handbook of Research on Learning and Instruction* (pp. 249–271). New York: Routledge.

Hills, J. R. (1991). Apathy concerning grading and testing. *Phi Delta Kappa, 72*, 540–545.

Hubain, B. S., Allen, E. L., Harris, J. C., & Linder, C. (2016). Counter-stories as representations of the racialized experiences of students of color in higher education and student affairs graduate preparation programs. *International Journal of Qualitative Studies in Education, 29*, 946–963.

Hughes-Hassell, S. (2013). Multicultural young adult literature as a form of counter-storytelling. *The Library Quarterly: Information, Community, Policy, 83*, 212-228.

Howard, T. (2012). Culturally responsive pedagogy. *Encyclopedia of Diversity in Education*. (pp. 549 -552). Thousand Oaks, CA: Sage.

Howard, G. (2016). *We can't teach what we don't know: White teachers, multiracial schools*. New York: Teachers College Press.

Hung, D., Lee, S. S., & Lim, K. (2012). Teachers as brokers: Bridging formal and informal learning in the 21st century. *KEDI Journal of Educational Policy, 9*(1), 71–89.

Hutchison, L. F., & McAlister-Shields, L. (2020). Culturally Responsive Teaching: Its Application in Higher Education Environments. *Education Sciences*, *10*(5), 124. Retrieved from https://doi.org/10.3390/educsci10050124

Hutchison, L. F., McAlister-Shields, L., & Jones, B. (2018). *Culturally responsive instructional strategies for higher education* [Unpublished manuscript]. Department of Curriculum and Instruction, University of Houston.

Isaacs, T., Zara, C., Herbert, G., Coombs, S. J., & Smith, C. (2013). *Key concepts in educational assessment*. London: Sage.

Jackson, Y. (2011). *The pedagogy of confidence: Inspiring high intellectual performance in urban schools*. New York: Teachers College Press.

Jameel, B., Shaheen, S., & Majid, U. (2018). Introduction to qualitative research for novice investigators. *URNCST Journal*, *6* (2), 1 -6. Retrieved from https://doi.org/10.26685/urncst.57

Kieran, L., & Anderson, C. (2018). Connecting universal design for learning with culturally responsive teaching. *Education and Urban Society*, *51*, 1202-1216. Retrieved from https://doi.org/10.1177/0013124518785012

Kılıçoglu, A. (2018). Qualitative research for educational science researchers: A review of an introduction to qualitative research. *The Qualitative Report, 23*, 949-951.

King, J. E., Swartz, E. E., Campbell, L., Lemons-Smith, S., & López, E. (2014). *Remembering history in student and teacher learning: An afrocentric culturally informed praxis*. New York, NY: Routledge.

Kohli, R., Pizarro, M., & Nevárez, A. (2017). The "new racism" of K–12 schools: Centering critical research on racism. *Review of Research in Education, 41,* 182-202.

Kohli, R., & Solórzano, D. (2012) Teachers, please learn our names!: Racial microaggressions and the K-12 classroom. *Race, Ethnicity and Education, 15*, 441-462.

Koloi-Keaikitse, S. (2012). *Classroom assessment practices: A survey of Botswana primary and secondary school teachers* [Unpublished doctoral dissertation]. Ball State University.

Krings, M. (January 24, 2017). *Claims of being 'color blind' implies race does not matter, leads to unequal education, professor says*. Phys. Retrieved from https://phys.org/news/2017-01-implies-unequal-professor.html

Ladson-Billings, G. (1994), *The dream keepers: Successful teachers of African American children*. San Francisco, CA: Jossey-Bass.

Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal, 32*, 465–491.

Ladson-Billings, G. (1998). Just what is critical race theory and what's it doing in a nice field like education? *International Journal of Qualitative Studies in Education, 11*(1), 7–24.

Ladson-Billings, G. (2005). The evolving role of critical race theory in educational scholarship. *Race, Ethnicity and Education*, 8, 115-119.

Ladson-Billings, G. (2006). From the Achievement Gap to the Education Debt: Understanding Achievement in U.S. Schools. *Educational Researcher*, 35(7), 3-12.

Ladson-Billings, G. (2006a). It's not the culture of poverty, it's the poverty of culture: The problem with teacher education. *Anthropology and Education Quarterly, 37*(2), 104–109.

Ladson-Billings, G. (2009). *The dream keepers: Successful teachers of African American children* (2nd ed.). San Francisco, CA: Jossey-Bass.

Ladson-Billings, G., & Tate, W. R., VI. (1995). Toward a critical theory of education. *Teachers College Record, 97*(1), 47-68.

Lawrence, S. M., & Bunche, T. (1996). Feeling and dealing: Teaching White students about racial privilege. *Teacher and Teacher Education, 12,* 531–542.

Learning Policy Institute (2018, April 19). *Teachers of color: In high demand and short supply: What's needed to spur recruitment and retention?* [Press Release] Retrieved from https://learningpolicyinstitute.org/press-release/teachers-color-high-demand-and-short-supply

Loeb, S., Edley, C., Jr., Imazeki, J., Stipek, D. (2018). *Current conditions and paths forward for California schools*. Getting Down to Facts. Retrieved from https://gettingdowntofacts.com/sites/default/files/2018-09/GDTFII%20Summary%20Report.pdf

Loewus, L. (2017) *The nation's teaching force is still mostly White and female*. Education Week. Retrieved from https://www.edweek.org/ew/articles/2017/08/15/the-nations-teaching-force-is-still-mostly.html

Love, D. (2018). Critical race theory and its impact on African-American student retention. *Scholar Journal of Applied Science and Research, 1*(7), 5-8.

Lynch, M. (2012, February 13). *What is culturally responsive pedagogy?* HuffPost. Retrieved from https://www.huffingtonpost.com/matthew-lynch-edd/culturally-responsive-pedagogy_b_1147364.html

Malo-Juvera, V., Powell, R., & Cantrell, S. C. (2013). Development, validation, and factor analysis of the culturally responsive instruction observation protocol. Paper presented at the 2013 annual meeting of the American Educational Research Association. Retrieved from the AERA Online Paper Repository. https://www.aera.net/Publications/Online-Paper-Repository/AERA-Online-Paper-Repository

Maraniss, D. (2012). Barack Obama: The Story.'Sew York, NY:Simon and Schuster Paperbacks.

Maryland Teacher Consortium (2014, July). Preparing Educators for High Poverty/Culturally and Linguistically Diverse Schools: A Manual for Teacher Educators, Teachers, and Principals Retrieved from http://www.marylandpublicschools.org/about/Documents/DEE/PreparingEducatorsHighPovertyCulturallyLinguisticallyDiverseSchools070914.pdf

Masters, G. (2018, April 30). *What is equity in education?* Teacher Magazine. Retrieved from https://www.teachermagazine.com.au/columnists/geoff-masters/what-is-equity-in-education

Matsuda, M. J., Lawrence, C. R., Delgado, R., & Crenshaw, K.W. (Eds.). (1993). *Words that wound: Critical race theory, assaultive speech, and the first amendment.* Boulder, CO: Westview Press.

Mayfield, V. M., & Garrison-Wade, D. (2015). Culturally responsive practices as whole school reform. *Journal of Instructional Pedagogies*, *16*, 1-17. Retrieved from https://files.eric.ed.gov/fulltext/EJ1069396.pdf

Mekawi, Y. (2017). Who is more likely to ‘‘not see race”? Individual differences in racial colorblindness. *Race and Social Problems, 9*. Retrieved from https://doi.org/1 0.1007/s12552-017-9211-3

Milner, H. R. (2003). Teacher reflection and race in cultural contexts: History, meanings, and methods in teaching. *Theory into Practice, 42*, 173-180.

Milner, H. R. (2008). Critical race theory and interest convergence as analytic tools in teacher education policies and practices. *Journal of Teacher Education, 59*, 332–346. Retrieved from https://doi.org/10.1177/0022487108321884

Milner, H. R. (2011). Culturally relevant pedagogy in a diverse urban classroom. *The Urban Review, 43*, 66-89.

Milner, H. R. (2012). *Start where you are, but don't stay there: Understanding diversity, opportunity gaps, and teaching in today's classrooms*. Cambridge, MA: Harvard Education Press.

Misco, T. (2018). Culturally responsive curriculum and pedagogy in the commonwealth of the Northern Mariana Islands. *International Journal of Multicultural Education*, *20*(2), 81-100.

Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory into Practice, 31*, 132-141.

Mooney, T. (2018, May 11). *Why we say "opportunity gap" instead of "achievement gap.*" Teach for America. Retrieved from https://www.teachforamerica.org/stories/why-we-say-opportunity-gap-instead-of-achievement-gap

Mordechay, K., & Orfield, G. (2017). Demographic transformation in a policy vacuum: The changing face of U.S. metropolitan society and challenges for public schools. *The Educational Forum, 81*, 193-203.

Morrison, K. A., Robbins, H. H., & Rose, D. G. (2008*).* Operationalizing culturally relevant pedagogy: A synthesis of classroom-based research*. Equity & Excellence in Education, 41*, 433-452.

National Assessment of Education Progress. (2013). *Mathematics and reading assessments: Percentage at or above proficient*. National Assessment of Educational Progress (NAEP). Nation's Report Card. Retrieved from https://www.nationsreportcard.gov/reading_math_2013/#/mathematics/state/acl?grade=4

National Assessment of Education Progress. (2015a*). Mathematics and reading assessments: Percentage at or above proficient*. National Assessment of Educational Progress (NAEP).

Nation's Report Card. Retrieved from https://www.nationsreportcard.gov/reading_math_2015/#mathematics/state/acl?grade=4

National Assessment of Education Progress. (2015b). *Mathematics and reading assessments: Percentage at or above proficient*. National Assessment of Educational Progress (NAEP). Nation's Report Card. Retrieved from https://www.nationsreportcard.gov/reading_math_2015/#mathematics/state/acl?grade=8

National Center for Education Statistics. (2011). *School Composition and the Black–White Achievement Gap*. Retrieved from https://nces.ed.gov/nationsreportcard/subject/studies/pdf/school_composition_and_the_bw_achievement_gap_2015.pdf

National Center for Education Statistics. (2014). *Projections of Education Statistics to 2022* (Report No. 2014-051). Retrieved from https://nces.ed.gov/pubs2014/2014051.pdf

National Center for Education Statistics. (2015). *School Composition and the Black–White Achievement Gap* (Report No. 2015-018). Retrieved from https://nces.ed.gov/nationsreportcard/subject/studies/pdf/school_composition_and_the_bw_achievement_gap_2015.pdf

National Center for Education Statistics. (2016). *Status and trends in the education of racial and ethnic groups 2016* (Report No. 2016-007). Retrieved from https://nces.ed.gov/pubs2016/2016007.pdf

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.

Neubrand, M. (2006). Multiple Lösungswege für Aufgaben: Bedeutung für Fach, Lernen, Unterricht und Leistungserfassung [Multiple procedures for problems: Importance for content, learning, teaching and measurement of performance]. In W. Blum, C. Drüke-Noe, R. Hartung, & O. Köller (Eds.), *Bildungsstandards Mathematik: Konkret. Sekundarstufe I: Aufgabenbeispiele, Unterrichtsanregungen, Fortbildungsideen NStandards for school mathematics on the low-secondary level: Tasks, ideas for teaching and teacher training]* (pp. 162–177). Berlin, Germany: Cornelsen.

Neuman, S. B. (1999). Creating continuity in early literacy: Linking home and school with a culturally responsive approach. In L. B. Gambrell, L. M. Morrows, S. B. Neuman, & M. Presley (Eds.), *Best practices in literacy instruction* (pp. 258-270). New York, NY: Guilford.

Nguyen, T. D., & Redding, C. (2018). Changes in the demographics, qualifications, and turnover of American STEM teachers, 1988–2012. *AERA Open*. Retrieved from https://doi.org/10.1177/2332858418802790

No Child Left Behind Act of 2001. Public Law No. 107–110, § 115 Stat. 1425 (2002).

Organization for Economic Cooperation and Development. (2012). *Equity and quality in education: Supporting disadvantaged students and schools*. OECD. Retrieved from http://dx.doi.org/10.1787/9789264130852-en

O'Sullivan, R. G., & Chalnick, M. K. (1991). Measurement-related course work requirements for teacher certification and recertification. *Educational Measurement: Issues and Practices, 10*(1), 17–19.

Phillips, J. (2012). Indigenous knowledge perspectives: Making space in the Australian centre. In J. Phillips & J. Lampert (Eds.*), Introductory studies in education: Reflection and the importance of knowing* (2nd ed., pp. 9-25). Frenchs Forest, Australia: Pearson.

Plucker, J. A., Burroughs, N., & Song, R. (2010). *Mind the (other) gap! The growing excellence gap in K-12 education*. Center for Evaluation and Education Policy. Retrieved from https://files.eric.ed.gov/fulltext/ED531840.pdf

Pollock, M. (2004). *Colormute: Race talk dilemmas in an American school*. Princeton, NJ: Princeton University Press.

Popham, W. J. (2008). *Transformative assessment*. Alexandria, VA: Association for Supervision and Curriculum Development.

Porges, S. (2011). *The polyvagal theory: Neurophysiological foundation of emotions, attachment, communication, and self-regulation*. New York, NY: W. W. Norton & Company.

Powell, R., & Cantrell, S. C., Malo-Juvera, V., & Correll, P. (2016). Operationalizing culturally responsive instruction: Preliminary findings of CRIOP research. *Teacher's College Record, 118*, 1-46.

Quinn, D. M., & Stewart, A. M. (2019). Examining the racial attitudes of white pre-K–12 educators. *The Elementary School Journal, 120*, 272-299.

Reardon, S. F., & Hinze-Pifer, R. (2018). *Test score growth among Chicago public school students, 2009-2014.* Center for Education Policy Analysis. Retrieved from https://cepa.stanford.edu/sites/default/files/chicago%20public%20school%20test%20scores%202009-2014.pdf

Resmovits, J. (2018, April 9). *In California, national test scores show enduring achievement gaps.* LA Times. Retrieved from https://www.latimes.com/local/education/la-me-edu-california-tests-20180409-htmlstory.html

Rhodes, J. E., Spencer, R., Keller, T. E., Liang, B., & Noam, G. (2006). A model for the influence of mentoring relationships on youth development. *Journal of Community Psychology, 34*, 691-707.

Rightmyer, E. C., Powell, R., Cantrell, S. C., Powers, S., Carter, Y., Cox, A. & Aiello, R. (2012). Culturally responsive instruction protocol [Observation protocol]. Retrieved from Collaborative Center for Literacy Development website: https://sites.google.com/site/culturallyresponsiveliteracy/criop

Risko, V., & Walker-Dallhouse, D. (2007). Tapping students' cultural funds of knowledge to address the achievement gap. *Reading Teacher, 61*(1), 98-100.

Rittle-Johnson, B., & Star, J. R. (2009). Compared with what? The effects of different comparisons on conceptual knowledge and procedural flexibility for equation solving. *Journal of Educational Psychology, 101*, 529–544.

Roeder, H. H. (1972). Are today's teachers prepared to use tests? *Peabody Journal of Education, 59*, 239–240.

Salloum, S. J., Goddard, R. D., & Larsen, R. (2017). Social capital in schools: A conceptual and empirical analysis of the equity of its distribution and relation to academic achievement. *Teachers College Record, 119*(7) 1 - 29.

Samuels, A. J. (2018). Exploring culturally responsive pedagogy: Teachers' perspectives on fostering equitable and inclusive classrooms. *Southeastern Regional Association of Teacher Educators* (*SRATE) Journal, 27*(1), 22-30.

Samuels, A. J., Samuels, G. L., & Cook, T. M. (2017). Examining perceptions of culturally responsive pedagogy in teacher preparation and teacher leadership candidates. *SRATE Journal, 26*(2), 50-60.

Shear, Michael D. (2011 April 27). "With Document, Obama Seeks to End 'Birther' Issue," New York Times.

Silseth, K. (2017). Students' everyday knowledge and experiences as resources in educational dialogues. *Instructional Science: An International Journal of the Learning Sciences, 46,* 291-313.

Silver, E. A., Ghousseini, H., Gosen, D., Charalambous, C. Y., & Font Strawhun, B. T. (2005). Moving from rhetoric to praxis: Issues faced by teachers in having students consider multiple solutions for problems in the mathematics classroom. *Mathematical Behavior, 24*, 287–301.

Sleeter, C. E. (2001). Preparing teachers for culturally diverse schools. *Journal of Teacher Education, 52,* 94–106.

Sleeter, C. E. (2017). Critical race theory and the whiteness of teacher education. *Urban Education, 52,* 155–169.

Solano, I., & Weyer, M. (2017). Closing the opportunity gap in early childhood education. (Brief No. 25). National Conference of State Legislatures. Retrieved from https://www.ncsl.org/research/education/closing-the-opportunity-gap-in-early-childhood-education.aspx

Solórzano, D., & Yosso. T. (2002) A critical race counterstory of race, racism, and affirmative action. *Equity & Excellence in Education, 35*, 155-168.

Southern Poverty Law Center. (2017). Post-election bias incidents up to 1,372; New collaboration with ProPublica. Retrieved from https://www.splcenter.org/hatewatch/2017/02/10/post-election-bias-incidents-1372-new-collaboration-propublica

Spring, J. (2011). *The American school: A global context from the Puritans to the Obama era* (8th ed.). New York, NY: McGraw-Hill.

Stiggins, R. J. (2001). *Student-involved classroom assessment* (3rd ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

Sue, D. W., Lin, A. I., Torino, G. C., Capodilupo, C. M., & Rivera, D. P. (2009). Racial microaggressions and difficult dialogues on race in the classroom. *Cultural Diversity and Minority Psychology, 15,* 183–190.

Sue, D. W., Torino, G. C., Capodilupo, C. M., Rivera, D. P., & Lin, A. I. (2009). How White faculty perceive and react to difficult dialogues on race. *Counseling Psychologist, 37*, 1090–1115.

Taylor, E. (1998). A primer on critical race theory: Who are the critical race theorists and what are they saying? *The Journal of Blacks in Higher Education, 19*, 122-124.

Taylor, E., Gilborn, D., & Ladson-Billings, G. (2009). *Foundations of critical race theory in education*. London: Routledge.

Todman, V. (2018, May 30). Sense of belonging and social capital: Our hot topics for 2018/19. King's College London. Retrieved from https://blogs.kcl.ac.uk/behaviouralinsights/2018/05/30/sense-of-belonging-and-social-capital-our-hot-topics-for-2018-19/

U.S. Department of Education. (2015) Retrieved from https://www.ed.gov/essa?src=rn

Villegas, A. M., & Irvine, J. J. (2010). Diversifying the teaching force: An examination of major arguments. *Urban Review, 42*, 175–192.

Villegas, A., & Lucas, T. (2002). *Educating culturally responsive teachers: A coherent approach*. Albany, NY: State University of New York.

Wallace, T., & Brand, B. (2012). Using critical race theory to analyze science teachers' culturally responsive practices. *Cultural Studies of Science Education. 7,* 341–374.

Walters, D. (2018, October 7). *California's school 'achievement gap' proves persistent*. CalMatters. Retrieved from https://calmatters.org/articles/commentary/californias-school-achievement-gap-proves-persistent/

Warikoo, N., Sinclair, S., Fei, J., & Jacoby-Senghor, D. (2016). Examining racial bias in education: A new approach. *Educational Researcher, 45*, 508–514.

Warren, B., Ballenger, C., Ogonowski, M., Rosebery, A. S., & Hudicourt-Barnes, J. (2001). Rethinking diversity in learning science: The logic of everyday sense-making. *Journal of Research in Science Teaching, 38,* 529–552.

William, D. (2006). Formative assessment: Getting the focus right. *Educational Assessment, 11,* 283-289.

Williams, T. (2018) Do no harm: Strategies for culturally relevant caring in middle level classrooms from the community experiences and life histories of Black middle level teachers. *REMC Online: Research in Middle Level Education, 41*(6), 1-13.

Wing, A. (Ed.). (1997) *Critical race feminism: A reader*. New York, NY: New York University Press.

Wing, A. (Ed.). (2000). *Global critical race feminism: An international reader*. New York, NY: New York University Press.

Wink, J. (2011). *Critical pedagogy: Notes from the real world* (4th ed). Upper Saddle River, NJ: Pearson.

Young, E. (2010). Challenges to conceptualizing and actualizing culturally relevant pedagogy: How viable is the theory in classroom practice? *Journal of Teacher Education, 61,* 248–260.

Yu, M., Johnson, H., Deutsch, N., & Varga, S. (2018). "She calls me by my last name": Exploring adolescent perceptions of positive teacher-student relationships. *Journal of Adolescent Research, 33,* 332–362.

Zirkel, S. (2008). The influence of multicultural educational practices on student outcomes and intergroup relations. *Teachers College Record, 110,* 1147 -1181.

Zorn, D., Ludwig, K., & van den Hoogenhof, S. (2010). The achievement gap in Cincinnati. Retrieved from https://crcblog.typepad.com/The%20Achievement%20Gap%20in%20Greater%20Cincinnati.pdf

APPENDIX A

Culturally Responsive Instruction Observation Protocol

School:_____ Teacher: _____

_____

Observer:_____ Date of Observation: _____ # of Students in

Classroom: _____

Start Time of Observation: _____ End Time of Observation:_____ Total Time of Obs: ___

_____

DIRECTIONS

After the classroom observation, review the field notes for evidence of each "pillar" of Culturally Responsive Instruction. If an example of the following descriptors was observed, place the field notes line number on which that example is found. If a "non-example" of the descriptors was observed, place the line number on which that non-example is found. Then, make an overall/holistic judgment of the implementation of the concept, according to the following rating scale:

4 = The classroom was CONSISTENTLY CHARACTERIZED by culturally responsive features
3 = The classroom was OFTEN CHARACTERIZED by culturally responsive features
2 = The classroom was OCCASIONALLY CHARACTERIZED by culturally responsive features
1 = The classroom was RARELY CHARACTERIZED by culturally responsive features
0 = The classroom was NEVER CHARACTERIZED by culturally responsive features

Transfer the holistic scores from pp. 2 through 9 to the table below.

CRI Pillar	Holistic Score
I. ASMT	
II. CARE	
III. CLIM	
IV. CURR	

CRI Pillar	Holistic Score
V. DISC	
VI. INSTR	
VIII. PERSP	

I. ASSESSMENT PRACTICES Holistic score 4 3 2 1 0

CRI Indicator	For example, in a responsive classroom:	For example, in a non-responsive classroom:	Field notes: time of example	Field notes: time of non-example	Field notes: No example (✔)
1. The teacher **gives clear direct feedback**	• Teacher writes comments on student work that indicate his/her interest in the work ("Would he really do that?" "I'd like to know more about this …") • Rubrics for particular assignments are displayed and teacher refers to criteria as students develop their products	• Teacher responds to student work with short evaluative comments such as "good job" or "✔"			
2. The teacher includes **multiple ways to represent knowledge** and skills (all of the language arts, visual arts, music, drama, math)	• Students can demonstrate knowledge in multiple ways (talking, writing, drama, art, etc.) • Multiple assessments are used so students have various ways to demonstrate competence	• Teacher expects students to tell "the" answer • Teacher tells students "the" answers			
3. The teacher encourages **student self-assessment**	• Students use rubrics to assess their own products • Students are involved in developing the criteria for their finished products (e.g., scoring rubrics) • Students are encouraged to evaluate their own products based upon a pre-determined set of criteria • Peer assessment is used (e.g., peers read each other's work and comment on it)	• Students expect teacher to know all the answers • Students turn all work into the teacher for a grade			
4. The teacher uses **multifaceted** (more than one type of measure), **classroom-based** assessments, **tied to particular projects**	• Authentic assessments are used frequently (e.g., authentic group discussions/conversations, presentations, reading/writing for real audiences, etc.) • Assessments typically involve reading and writing connected text (e.g., running records, journal responses, etc.)	• Students work only on worksheets • Students have a narrow range of options for demonstrating competence (e.g., multiple choice tests, matching, etc.) • Teacher uses standardized testing			

	• Formal and informal assessments are used to provide a holistic view of students' strengths and needs	or constant quizzing; no assessment alternatives			
5. The teacher uses **assessment data** that **captures individual** student **learning**/thinking	• Teacher uses assessment data to differentiate instruction • Teacher uses formative assessment to provide explicit instruction to students when they need it	• Teacher uses assessment data only to assign grades; data not used formatively to provide explicit instruction when needed • Teacher relies on summative assessments to inform instruction • Formative assessments are too general to capture individual student understanding (e.g. class discussions where only a few students participate)			

II. CLASSROOM CARING AND TEACHER DISPOSITIONS **Holistic score 4 3 2 1 0**

CRI Indicator	For example, in a responsive classroom:	For example, in a non-responsive classroom:	Field notes: time of example	Field notes: time of non-example	Field notes: No example (✔)
1. The teacher demonstrates an **ethic of care** (e.g., equitable relationships, bonding)	• Teacher differentiates management techniques (e.g., using a more direct interactive style with students who require it) • Teacher refers to students by name, uses personalized language with students • Teacher consistently models respectful interaction with students in the classroom • Teacher consistently demonstrates high expectations for student social interactions	• Teacher makes sarcastic comments • Teacher promotes negativity in the classroom; frequent criticisms, negative comments, etc. • Teacher uses the same management techniques and interactive style with all students when it is clear that they do not work for some • Teacher demonstrates low expectations for student social interactions			
2. The teacher communicates **high expectations** for all students	• Teacher differentiates instruction, recognizing students' varying background knowledge, readiness, language, preferences in learning, interests, etc. • Teacher advocates for all students • Teacher consistently demonstrates high expectations for all students academic achievement through insisting that they complete assignments, by providing challenging work, etc. (not letting them "get by" even when their home life is difficult)	• Teacher criticizes the student (the person), not the work (the product) • Teacher has low expectations (consistently gives work that is not challenging) • Teacher doesn't balance student participation • Teacher does not call on all students consistently • Teacher ignores some students; e.g., never asks them to respond to questions, allows them to sleep, places them in the "corners" of the room and does not bring them into the instructional conversation, etc. • Teacher tends to blame parents/home for lack of student achievement			
3. The teacher creates a learning atmosphere in which students and teachers **feel**	• Students do not hesitate to ask questions that further their learning • Students know the class routines and are supported by them • Students are encouraged	• Teacher dominates the decision-making • Teacher stays behind desk or across table from students; s/he does not get "on their level" • Students are never			

respect and **connect to** one another	to provide peer support and assistance ● Students are encouraged to respond to one another positively ● Students are invested in their and others' learning	encouraged to assist their peers ● Teacher does not address negative comments of one student towards another			
4. The teacher **actively confronts** instances of **discrimination**	● Teacher confronts students' biases and acts of discrimination in the classroom actively ● Teacher encourages a diversity of perspectives ● Teacher uses a variety of multicultural literature to expose students to a variety of individual experiences and perspectives of people from diverse populations ● Teacher engages students in critical examination of curriculum content and personal experiences that contribute to equity or inequity among individuals or groups in society	● Teacher appears to have "favorite" students ● Teacher allows students' open expression of prejudicial acts and statements toward others in the classroom community ● Teacher squelches diversity of opinion ● Teacher primarily presents content, curriculum, and ideas that are representative of a mainstream middle/upper class perspective(s) ● Teacher consistently uses literature that only provides positive images of mainstream populations			

III. CLASSROOM CLIMATE/ PHYSICAL ENVIRONMENT **Holistic score 4 3 2 1 0**

CRI Indicator	For example, in a responsive classroom:	For example, in a non-responsive classroom:	Field notes: time of example	Field notes: time of non-example	Field notes: No example (✔)
1. The physical materials and furnishings **invite students to use literacy**	• Materials are located so that all students can choose them • Classroom library includes many books (of all different reading levels) that reflect diversity; books are available and organized so students can find what they need/want • Computers are readily available and students use them for inquiry (e.g., to respond to questions they have in a particular content area; to work on self-selected projects) • Computer programs are clearly motivating to students and encourage a love of reading/writing	• Books and materials are locked away or cannot be accessed by students without teacher permission • Teacher controls most minutes of the day • Classroom contains few books that students want to read; students show lack of interest in reading outside of the requirements • Computer programs/ computer use generally involves "worksheets on a screen" and does not promote student inquiry or creativity			
2. The physical materials and furnishings **promote shared ownership** of the environment	• Rules are co-authored by school, students and teachers • Students help make decisions about materials and the environment • Everyone has access to materials and groups • Everyone shares responsibility for maintaining order in the physical environment	• Teacher dominates; students do not have choice; an autocratic environment • Teacher controls student access to materials • Classroom is devoid of student influence			
3. The physical materials establish an environment that demonstrates an **appreciation for diversity**	• Posters, bulletin boards, other images reflect human diversity • Classroom library and curriculum materials contain multicultural content that reflect the perspectives and experiences of diverse groups	• Posters, bulletin boards, other images do not reflect human diversity • Classroom library contains all or nearly all books written by white authors, with white protagonists; very few books reflect human diversity			

	• Curriculum materials call for real-life examples from students' experiences	• Classroom library and curriculum materials promote ethnocentric positions or ignore human diversity			
4. The furnishings allow students to be **seated with a partner or group** and collaborate or assist each other	• Chairs/desks are arranged to facilitate group work • Students can move to areas of the room conducive to their instructional activities (e.g., learning centers, carpet area, classroom library)	• Classroom is arranged for quiet, solitary work only • Teacher discourages student interaction			

IV. CURRICULUM/ PLANNED EXPERIENCES **Holistic score 4 3 2 1 0**

CRI Indicator	For example, in a responsive classroom:	For example, in a non-responsive classroom:	Field notes: time of example	Field notes: time of non-example	Field notes: No example (✔)
1. The curriculum and planned learning experiences **use the knowledge and experience of students**	• Students are involved in setting goals for their learning; e.g., KWL, developing self-assessment instruments, • Real-world examples that connect to students' lives are included in the curriculum • Learning experiences build on prior student learning and invite students to make connections • Examples of mainstream and non-mainstream beliefs, attitudes, and activities are included.	• No attempt is made to link students' realities to what is being studied • Learning experiences are disconnected from students' knowledge and experiences • Students' and families' particular "funds of knowledge" are never called upon during learning experiences • Teacher follows the script of the adopted program even when it conflicts with her own or the students' lived experiences.			
2. The curriculum and planned learning experiences involve students in **literacy for real purposes for real audiences**	• Curriculum experiences include inquiry-based reading, writing, and learning • Authentic, purposeful reading and writing tasks (e.g., letters or other texts written for real purposes; literacy performances; oral reading to an audience with the intent of informing or entertaining) are integral to the curriculum	• Worksheets and/or workbook assignments predominate • Students read from textbooks exclusively and responses to reading are prefabricated end-of-chapter questions, etc.			
3. The curriculum and planned learning experiences integrate and provide opportunities for the **expression of diverse perspectives**	• Texts with protagonists from diverse cultural, linguistic and/or socioeconomic backgrounds, and promotes understanding of a character's perspective are regularly used • Texts are examined from multiple perspectives • Opportunities are plentiful for students to present diverse perspectives through class discussions • Students are encouraged to challenge the ideas in a text	• Biased units of study that show only the conventional point of view (e.g., Columbus discovered America) are presented • No or very few texts are available with protagonists from diverse cultural, linguistic, and/or socioeconomic backgrounds • No opportunities is provided for students to present diverse views			
4. The curriculum and planned learning experiences **integrate skills and**	• Skills and strategies are taught in meaningful contexts • Children's own texts are used to demonstrate skills and concepts	• Skills are presented in isolation (never in application to authentic contexts) • The adopted reading program is characterized by non-contextual texts (skills in isolation rather than skills			

information		within authentic literature)			
5. The curriculum and planned learning experiences includes **issues important to the classroom, school and larger community**	• "Morning message" is used to build community – to teach, inspire, congratulate, communicate, etc. • Community-based projects are included in the planned program • Students write texts that relate to community issues • Students are engaged in learning experiences that develop awareness of and value for individual differences (e.g., within the classroom, school and community)	• Learning experiences are derived almost exclusively from published textbooks and other materials that do not relate to the classroom community or the larger community being served • Curriculum presents the belief that there is o • ne best/right way to view issues and individuals			

V. DISCOURSE/ INSTRUCTIONAL CONVERSATION **Holistic score 4 3 2 1 0**

CRI Indicator	For example, in a responsive classroom:	For example, in a non-responsive classroom:	Field notes: time of example	Field notes: time of non-example	Field notes: No example (✔)
1. The teacher encourages and responds positively to children's use of **home/native language/dialect**	• Teacher encourages peer conversation in home language during free time and academic time • Teacher allows family stories in home language/dialect • Teacher encourages ELL students to communicate with family members in their native language	• Teacher discourages students' use of home language, even when its use is appropriate to the situational context • Discourages ELL students' use of their native language outside of school			
2. The teacher builds upon and **expands upon student talk** in an authentic way	• Teacher promotes discussion (genuine conversations versus "guess what's in the teacher's head") • Teacher elicits student talk, e.g., open-ended questions • Teacher listens carefully by demonstrating active listening behaviors and responding appropriately to student comments • Teacher allows opportunities to share personal experiences of teacher, students – familiar, interesting topics • Teacher promotes extended talk – elaborated inquiry and discussion – not just providing an answer or a fact	• Teacher-student exchanges are typified by IRE discourse pattern (the traditional pattern of teacher-led classroom communication: teacher-initiation, students search for correct answer, teacher evaluates students' responses) • Single answer questions are typical ("guess what's in the teacher's head") • Teacher asks mostly closed-ended questions			
3. The teacher **shares control of classroom discourse** with students	• Teacher/students produce discourse together; collaborative • Classroom discourse is not dominated by "teacher talk;" teacher "air time" generally no greater than 60% • Teacher arranges and	• No opportunities for extended student talk; talk is dominated by the teacher			

	supports equitable participation, e.g., wait time, feedback, turn-taking, scaffolding of ideas ● Students are encouraged to comment on and expand upon ideas of their peers				
4. The teacher provides structures that promote **student collaborative talk**	● Teacher has structures in place that promote student talk, e.g., think/pair/share, small group work, partner work ● Teacher institutes collaborative learning to allow collaborative discourse	● No structures in place that would promote student talk (such as working in pairs, groups) ● Students "get in trouble" for talking about instructional material			

VI. PEDAGOGY/ INSTRUCTIONAL PRACTICES **Holistic score 4 3 2 1 0**

CRI Indicator	For example, in a responsive classroom:	For example, in a non-responsive classroom:	Field notes: time of example	Field notes: time of non-example	Field notes: No example (✔)
1. The teacher **learns with students**	• Teacher learns about diverse perspectives along with students • Teacher models active listening • Students take the role of teacher • Teacher uses the inquiry process and learns from students' investigation	• Teacher is the authority; students listen passively • Students not encouraged to challenge or question ideas presented or to engage in further inquiry			
2. The teacher **allows students to collaborate** with other students	• Teacher involves students in collaborative groups, "think/pair/share," students actively involved in thinking about ideas (student collaboration and response can be embedded throughout explicit instruction) • Students discuss books in literature circles where students are given increasing autonomy in the discussions based upon their level of development • includes student-controlled learning groups	• Most student work in the form of isolated seatwork • Students are reprimanded for helping each other			
3. The teacher uses **active, hands-on learning** that promotes student engagement	• Teacher uses an investigative ("let's find out") process • Teacher arranges shared literacy experiences that build a sense of community (e.g. choral reading, partner reading)	• Teacher-dominated lectures with no or very little student interaction throughout • Prefabricated worksheets or workbooks • Round robin reading • Exclusive use of textbooks with no "exploratory" learning			
4. The teacher **balances**	• Teacher models and demonstrates expected skills and behaviors and	• Skill and drill focus • Isolated school tasks, disconnected from each			

instruction using both explicit skill instruction and reading/writing for meaning	applies new skills to learning context • Teacher focuses on meaning; students dialogue about text in order to construct shared meaning • Teacher includes learning experiences that allow students to be physically active and involved	other, as well as repetitive and routine			
5. The teacher **gives students choices in content and assessment methods** based on their experiences, values, needs and strengths	• Teacher permits students some choice in assignments, reading materials, etc. • Teacher provides students with multiple pathways for demonstrating competence • Teacher allows students some choice in the topic of study and ownership in what they are learning	• Dominance of teacher-initiated assignments • No variation in assessments (e.g., ELLs are evaluated based upon their writing ability regardless of language proficiency level)			

VII. SOCIOPOLITICAL CONSCIOUSNESS/MULTIPLE PERSPECTIVES **Holistic score 4 3 2 1 0**

CRI Indicator	**For example, in a responsive classroom:**	**For example, in a non-responsive classroom:**	**Field notes: time of example**	**Field notes: time of non-example**	**Field notes: No example (✔)**
1. The teacher encourages students to think about and **question the way things are**	• Teacher encourages students to question the hegemonic social structure (the "way things are") • Teacher uses critical thinking techniques such as requesting evidence, accepting multiple points of view, respecting divergent ideas • Teacher helps students think in multiple ways and from multiple perspectives ("Are there other ways to think about it?") • Teacher explains and/or models that there could be multiple answers to a problem/task and multiple ways to find the answers	• Teacher reduces complex content to lists, facts • Teacher engages in mystification in which students are not given the "whole story" in order to avoid controversy • Teacher never engages students in dialogue about the issues being raised in a text			
2. The teacher encourages students to investigate and take action on **real world problems**	• Teacher addresses real life problems and issues within the students' communities and respects their "funds of knowledge" • Teacher allows students to write about topics that really matter to them and helps students identify those topics • Teacher encourages students to investigate real-world issues related to a topic being studied • Teacher encourages students to become actively involved in solving problems at the local, state, national, and global levels • Teacher uses literature, learning activities that encourage students to reflect on discrimination and bias • Teacher engages students in identifying and developing solutions that address social injustice(s)	• Teacher does not encourage application to real-world issues; accepts or endorses the status quo by ignoring or dismissing real life problems related to the topic being studied			
3. The teacher **actively deconstructs negative stereotypes** in instructional materials and other texts	• Teacher discusses biases in popular culture that students encounter in their daily lives (e.g., TV shows, advertising, popular songs, toys) • Teacher helps students to think about biases in texts (e.g., "Who has the power in this book?" Whose perspectives are represented in the text? Discussion and consideration of who benefits from specific beliefs and practices represented in texts.) • Teacher challenges students to deconstruct their own cultural assumptions and biases • Teacher engages students in using literate skills and behaviors to bring about needed changes that benefit underserved and/or marginalized populations (e.g., engage in discourse, activities, and/or acts of social justice)	• Teacher follows the script of the adopted program even when it conflicts with her own or the students' lived experiences • Teacher accepts information in written texts as factual • Teacher makes prejudicial statements to students (e.g., girls are emotional; immigrants don't belong here; etc.)			

4. The teacher instructs students to use **different discourse patterns** to fit the social context	• Teacher helps students focus on an audience in order to learn about "how language works" in various social contexts (How would I tell this to grandma? To the mayor?) • Teacher uses diverse texts that model and represent a variety of discourse patterns, dialects, writing styles (e.g., topic centered narratives, episodic narratives, etc.)	• Teacher requires students to use the same discourse (standard English) in all social contexts (e.g., lunchroom, playground)			

APPENDIX B

Interview Questions

1. Tell me about your educational experiences.
    a. Is this the only school you have worked? If not, describe the schools in which you worked. Urban? Suburban? Rural?
    b. What grade levels have you taught?
    c. Have you always taught math?
    d. How many years have you taught 8th grade mathematics?
2. Describe a typical day of teaching.
3. What strategies/ practices do you typically use in class? Why?
    a. How did you learn these strategies/ practices?
    b. How do these strategies/ practices engage students?
    c. How do these strategies/ practices assist with building student-teacher relationships?
4. Tell me about your students.
5. How do you build relationships with students?
6. What practices do you use to facilitate engagement?
7. Are you familiar with culturally responsive strategies?
8. Have you ever received training on culturally responsive strategies/ practices? If so, when was the training and did you learn and use any strategies that could have been incorporated in your pedagogy?
9. Please describe the culturally responsive strategies you use.
10. How can culturally responsive strategies/ practices merge with the strategies/ practices that you are already using?
11. How do you believe culturally responsive strategies/ practices affect the student-teacher relationship?
12. How do you believe culturally responsive strategies/ practices affect the engagement of African American and Latinx students, specifically?
13. Could you describe a successful moment you had while using culturally responsive instruction?
14. What are your biggest challenges in implementing culturally responsive instruction?